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NOVEMBER 1993 • ISSUE NO. 65
Display until November 10

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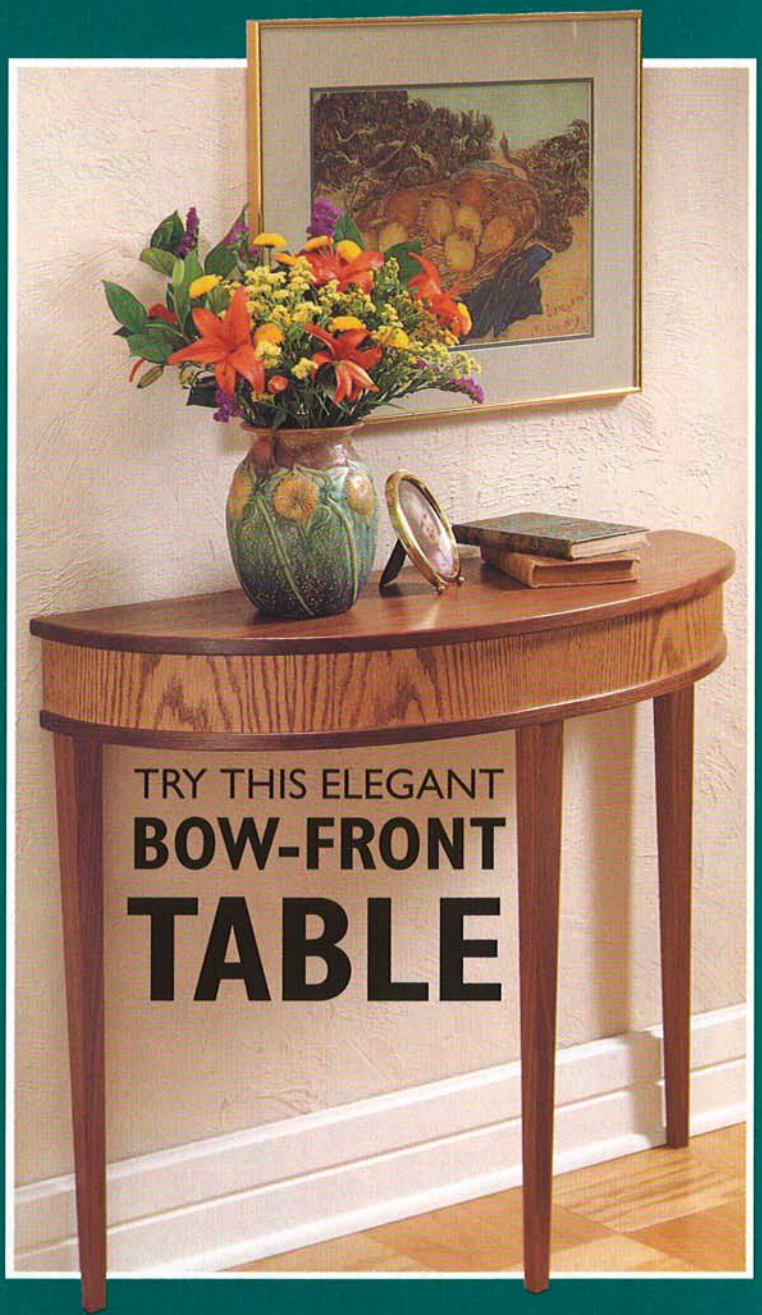

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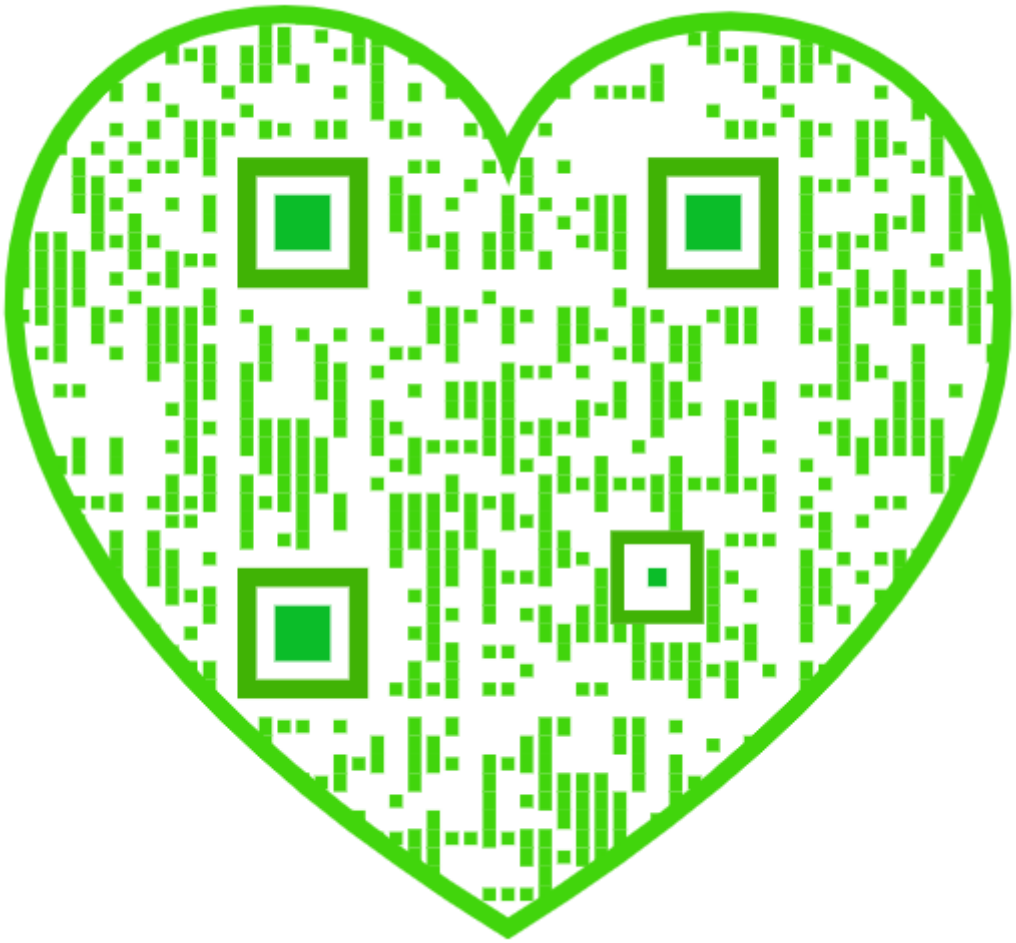

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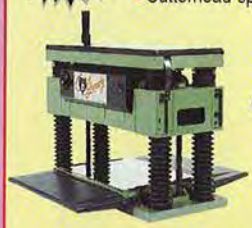

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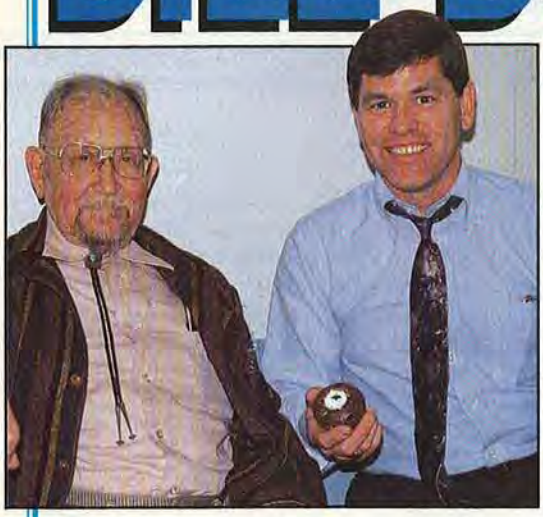
THE EDITOR'S ANGLE

BILL BOIAN



STILL WOODWORKING AFTER ALL THESE YEARS

Bill Boian and me talking woodworking and relaxing during his visit to our shop.

Print this article

In 1987, I had the good fortune to meet Bill Boian, then a 95-year-old man who was still actively involved in woodworking. Since then, I've thought about him many times, and a few months ago I called to see how things were going for *WOOD*® magazine's oldest reader.

Several things have changed for Bill in the six years since we met. His wife of many years is now gone, and Bill's eyesight isn't what it used to be. But, by golly, my 101-year-old friend still thinks about woodworking. In fact, he's even got a piece of material chucked up in his lathe (it's been there for about six months now), and he'll turn it "as soon as I get a new eyeglass prescription. I just can't see quite well enough right now," exclaims Bill.

While I was talking to this senior woodworker on the phone, it occurred to me that it might be fun for him to meet the *WOOD* magazine staff members and to see our woodworking shop. So I asked him, and he said, "Fine, but you'll want to call me the morning of the visit to see how I'm feeling. At my age, some days are better than others."

I let the staff know what I was planning, we ordered a cake to celebrate Bill's 101st birthday, and when the big day arrived, we made arrangements to have him picked up at his house. (Amazingly enough, he still has a car and a driver's license, but I didn't want to take any chances.)

All of us had a terrific time during our get-together, especially Bill, who says now that he's as old as he is, he seems to be in demand everywhere. We gave him a small clock and a *WOOD* magazine apron to commemorate his visit, and as I walked him to the elevator for his ride back home, he said, "This is a reception I'll long remember." I hope so, Bill. Many happy returns.

Larry Clayton

Photograph: Bill Krier

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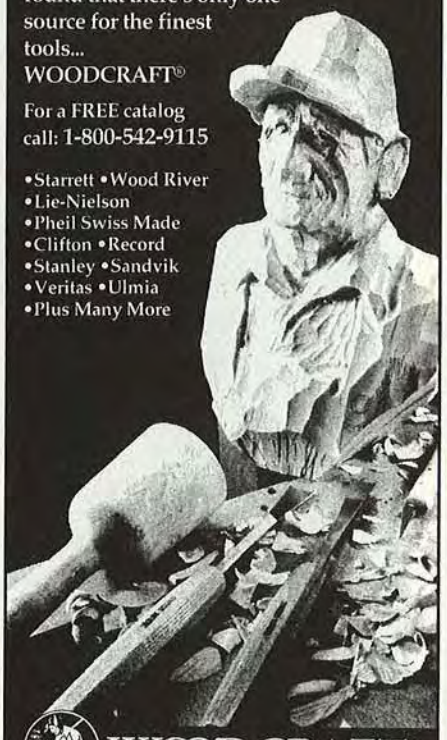

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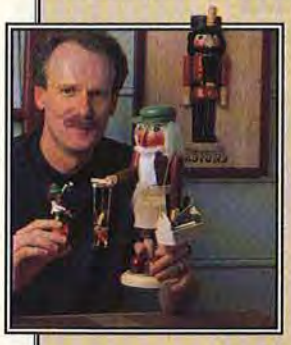


CRAFTSMAN CLOSEUP

Nutcrackers suite as can be 27
Come Christmas season, folks around Richmond, Virginia, enjoy buying one or more of Glenn Crider's wonderful nutcracker figures. Here, meet Glenn and learn how he makes his charming collection of characters.

Bow-front table 30
Spice up a hall or entry with the elegant, three-legged project featured on the cover. During construction, you'll get a world of valuable experience bending wood around a form in order to create the table's attractive curved front.

Great introductions 34
See what's new and innovative in the 1993 woodworking tool marketplace with the 13 star performers of this impressive gathering.

FROM THE IDEA SHOP™

Lumber-storage rack 42
Looking for the ideal solution to managing that pile of boards, sheet goods, and dowel stock that's cluttering up your shop? Check out this wall-hugging system. You can build it to suit your needs.

Power-tool roundup 46
It's back and better than ever—our annual collection of informative tool evaluations. This year's selections span seven categories.

Dado blades 46
Bandsaws 48
Portable circular saws 50
Dust collectors 52
Jigsaws 54
Mitersaws 56
Stationary sanders 58

This issue's cover wood grain : Magnolia

TURNING

Ageless urn.....60

Follow our detailed instructions and drawings on staved turning and create a museum-quality piece your friends will marvel over. Use the gridded half-pattern inside to guarantee your success.

DEVELOP YOUR SHOP SKILLS

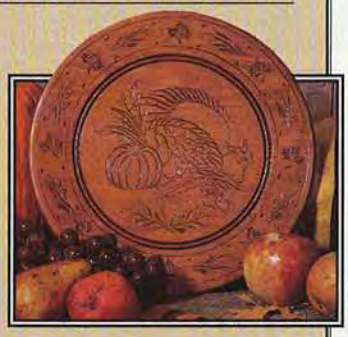
Bench chisels.....64

Add to your hand-tool expertise with the chiseling basics shown here. We cover stop, stock-removal, and paring cuts, as well as how to square rounded corners and clean up glue squeeze-out.

CARVING

Plate of plenty.....66

Get into the Thanksgiving Day spirit by chip-carving this pleasing decorative project. Our full-sized patterns let you duplicate the relief carving you see at *right*.



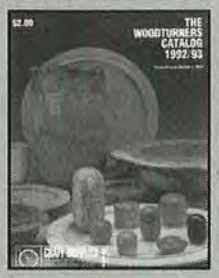
Tumbling-block quilt hanging.....68

Go country by making this fun wall hanging. The framed wood mosaic displays what appear to be stacked wooden blocks in a three-dimensional pattern reminiscent of a popular early-American quilt design.

SHORT-SUBJECT FEATURES

Editor's Angle 1
Tips From Your Shop.....6
Talking Back 16
Wood Anecdote.....24
Manufacturers Listing 72
Winners in Previous Tool Reviews 74
Great Ideas For Your Shop..76
Ask *WOOD* 78
Finishing Touches 88

THE WOODTURNERS CATALOG



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November 1993 • Vol. 10, No. 8 • Issue No. 65

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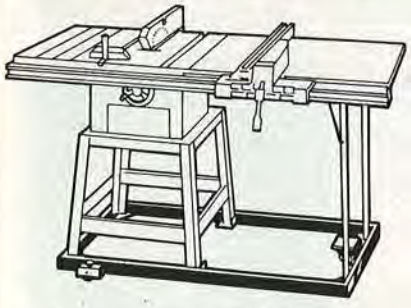

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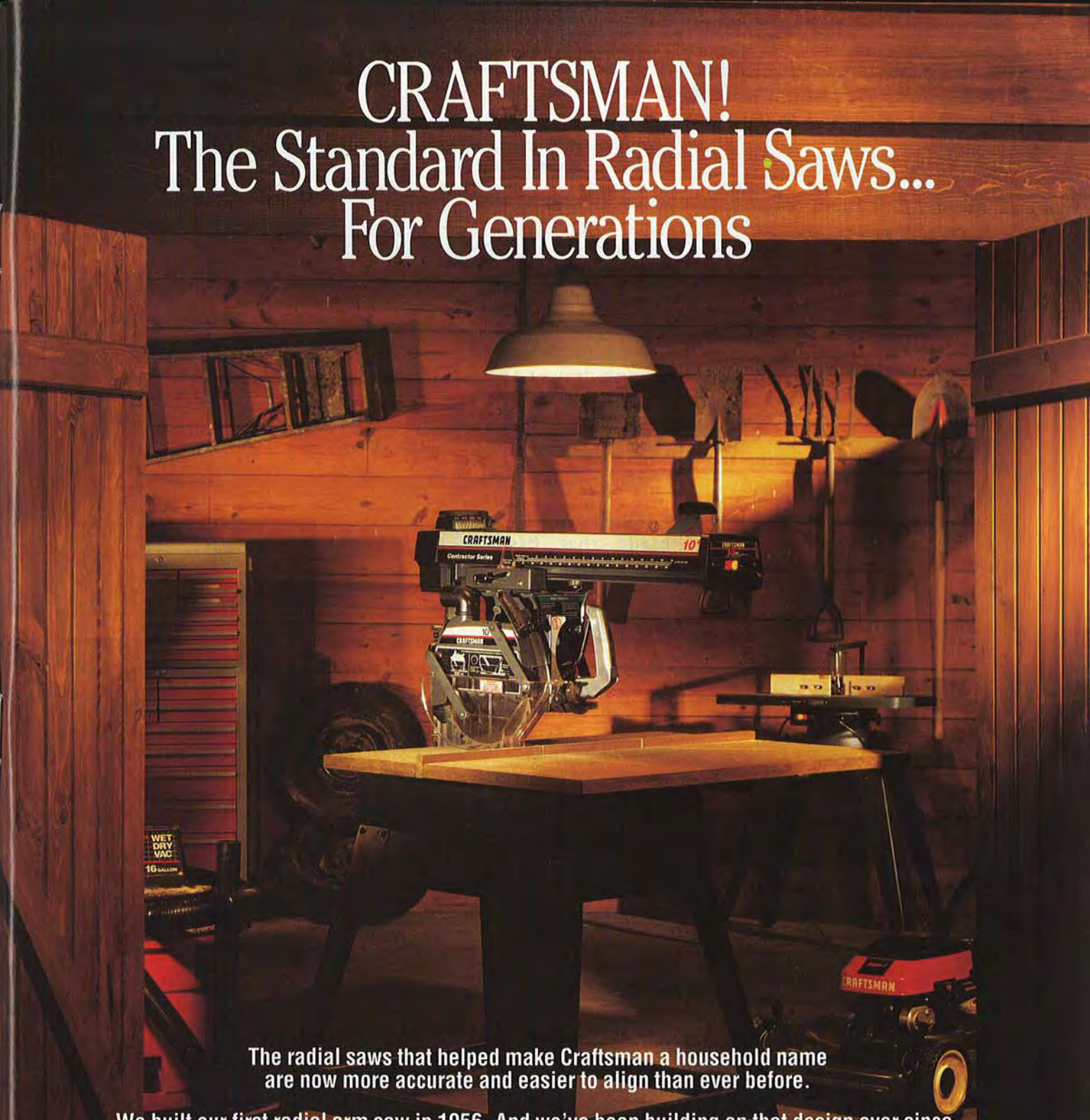

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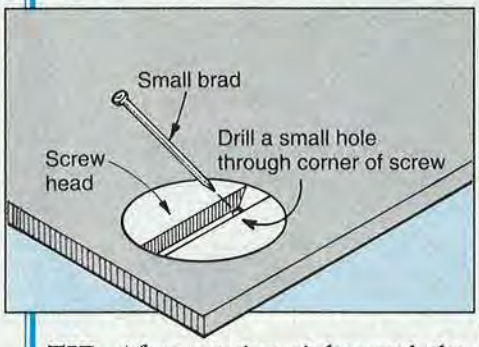
Use one fastener to lock another in place

A lockwasher keeps a roundhead screw from working loose. But, what can you do to keep a flathead screw tight in a countersunk hole, as on a hinge?



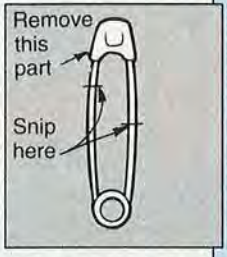
TIP: After you've tightened the screw, drill a small hole through one end of the slot in the screw head and on through the piece of hardware. Drive a wire brad or small nail into the hole. This keeps the screw from turning, so it can't work loose.

—George H. Swisher, Bowie, Md.

Safety pin facilitates inside scrollsaw cuts

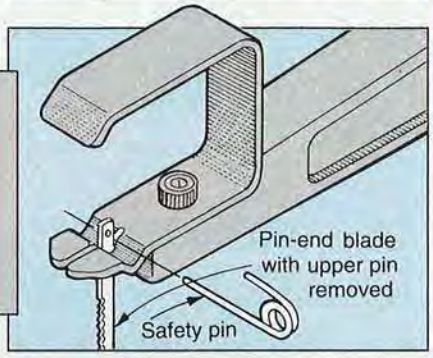
Scrollsaws that accept only pin-end blades limit your ability to make inside cuts—sometimes the smallest hole that the blade will fit through is larger than the area you want to cut out.

TIP: Remove the pin from the top of the blade. Now, raid the sewing drawer to find a heavy safety pin that fits the hole snugly. Snip the safety pin where shown. You now have a blade retaining pin with a loop handle, and a blade that fits through a much smaller start hole.



—Gloria Massey, Spartanburg, S.C.

For her tip, Gloria receives a Stanley Professional bench plane and block plane, both shown *above*.



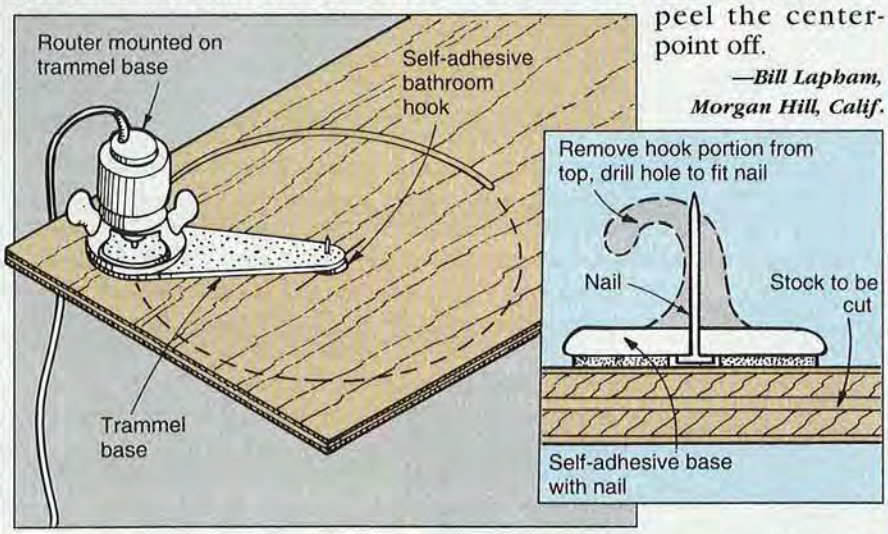
This stick-on center solves a sticky cutting problem

Cutting a circular piece with a trammel-mounted router or portable sabersaw leaves a hole right in the middle. What can you do to make a circle without a hole in the middle?

TIP: Make a no-hole centerpoint by modifying a self-adhesive plastic towel hook. (You can buy them in packages at hardware or variety stores.) Cut off the hook, and sand the front of the adhesive-backed base flat. At the center, drill a hole to fit a common nail. Push the nail through from the adhesive side, and cut it off so it protrudes about 1". Trim the adhesive backing around the nailhead and epoxy the nail into position, if necessary.

To use, mark the center of your cutting piece with a large X. Stick the centerpoint over the mark, and put the hole in the trammel arm over the nail. Afterwards, peel the centerpoint off.

—Bill Lapham, Morgan Hill, Calif.


Router mounted on trammel base
Self-adhesive bathroom hook
Trammel base
Remove hook portion from top, drill hole to fit nail
Nail
Stock to be cut
Self-adhesive base with nail

Continued on page 8

HOW TO FIND YOUR WAY THROUGH THE WOODS.

In woodworking, every project is an adventure. You explore the wood, studying its grain, searching for something hidden within.

Your goal is to emerge, weeks later, with a proud souvenir. A planter. A Shaker chair. Or perhaps a rustic chest of drawers.

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For accurate, repetitive drilling, the 3380 benchtop drill press is precisely what you need. The depth measurement and sturdy, adjustable table guarantee consistency from first hole to last.

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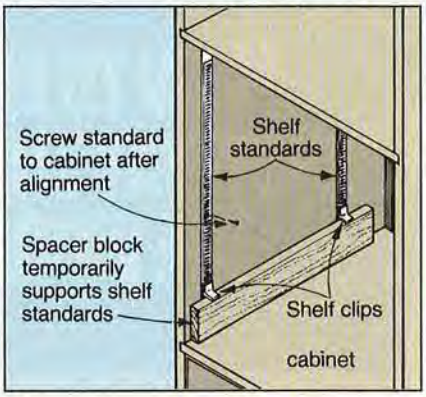
TIPS FROM YOUR SHOP (AND OURS)

Continued from page 6

A starting block sets shelf standards straight

Stray the least bit off the mark when installing shelf standards, and your shelves rock maddeningly. How can you set them right?



TIP: Fit a spacer block between the cabinet bottom and a slot near the bottom of the shelf standard. Install a shelf clip upside down in the slot, and then rest it on top of the block to position the standard while you drive in the screws or nails. Repeat for the other standards for accurate placement.

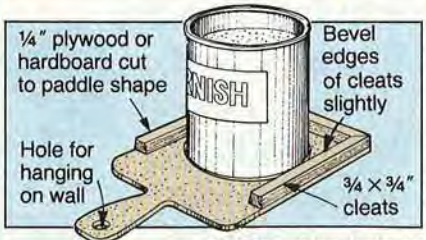
–Lance Lewis, West Newbury, Mass.

Set paint on a paddle for a clean benchtop

Finish cans leave drips and rings that mar your benchtop. Even if you put down papers, some of the finish may soak through and make a mess, anyway.

TIP: Just cut a rectangular paddle similar to the one shown to fit the finish-can size you're using. Add three ¾×¾" strips, placing the two side ones on a slight angle to create a wedge-shaped opening to hold the can securely. Drill a hole in the handle so you can hang the paddle up between uses.

–Jack Brown, Noank, Conn.



Continued on page 10

The inverted router, adjustable rails, a sliding miter table, and the air floatation/vacuum clamp system. Is this a table saw, or a woodworker's theme park?

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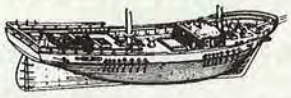

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TIPS FROM YOUR SHOP (AND OURS)

Continued from page 8

Pull the plug on tenoning troubles

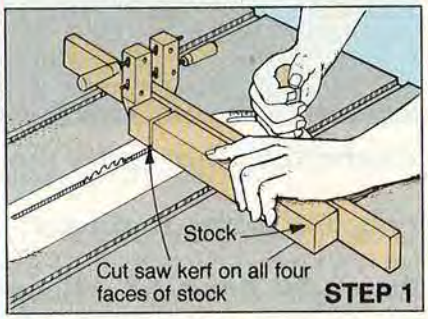
You could turn a round tenon on square stock. But, what if you don't have a lathe?

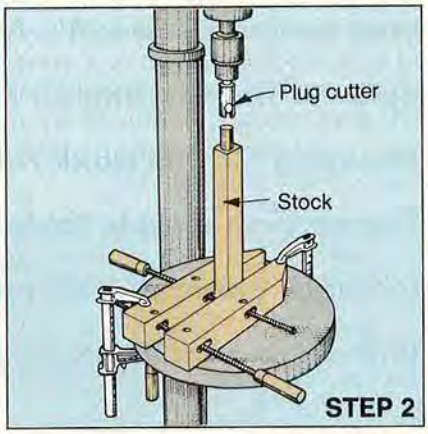
TIP: Make those round tenons with a tablesaw, drill press, and plug cutter. After determining the tenon dimensions (for example, a ¾"-diameter, ⅝"-long tenon on 1½" square stock), subtract the diameter from the thickness of the stock. Set your tablesaw's cutting depth to *half* that distance (that's ⅜" in our example).

Now, using your tablesaw miter gauge and a stopblock, cut a kerf ⅝" (or your tenon length) from the end of the stock on each face. Be sure to measure from the end of the stock to the farthest side of the blade. (Step 1 *below.*)

Next, chuck a plug cutter the diameter of your tenon into your drill press. Then, holding the workpiece firmly with clamps, center the plug cutter on the end of the stock, start the drill press, and cut the tenon. (Step 2.)

–Chuck Hedlund, Des Moines, Iowa





Continued on page 12

A few feet or so from a 1940 Delta Bench Drill Press stands another "sure-to-be" Delta heirloom. The new Delta Sanding Center™ Belt/Disc Sander.

George Reid, master craftsman and furniture historian, admits he's never seen anything quite like it. A machine capable of precision edge-sanding a 24" diameter circle.(48" with accessory extension.) With a 6"x 48" belt and 12" disc, accompanied by a power take-off shaft that handles dozens of accessories. Like pneumatic drums, flap wheels, buffing wheels and a flexible shaft, just to name a few. And a hefty cast iron base that incorporates single port dust collection.

In his 51 years of working with wood, Mr. Reid has created scores of perfect historical reproductions and original heirlooms, both full size and miniature, using his old Delta machines. And at age 78, George isn't about to back away from a new idea like the Delta Sanding Center. He points out, "This time Delta's put everything into one machine."

For more information on the Sanding Center or the name of your nearest Delta dealer, call toll free: Delta International Machinery Corp., Pittsburgh, PA, 800-438-2486. In Canada, 519-836-2840.

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TIPS FROM YOUR SHOP (AND OURS)

Continued from page 10

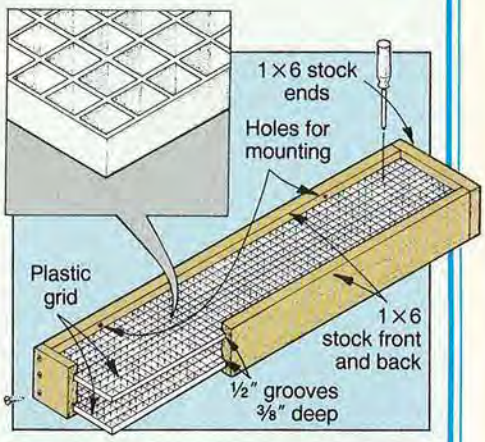
Plastic light grid shines for screwdriver storage

Screwdrivers, awls, chisels, and the like sometimes seem to defy organization. Too often, they end up tossed in a drawer. That means rummaging through dozens of tools to find the one you need.

TIP: Organize lots of tools in a small area with this handy rack. Start with a plastic grid made to cover fluorescent lights in suspended ceilings (available in 2′×4′ panels at most lumberyards and home centers). Cut two matching pieces of the grid to a convenient size.

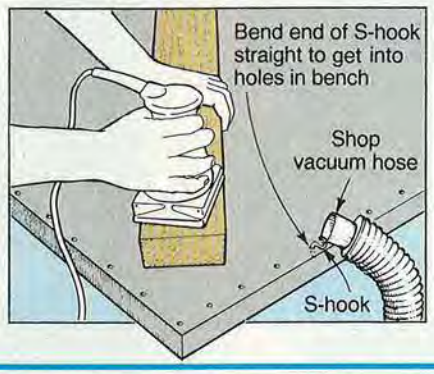
Build the surround from 1×6 (nominal) stock. Cut ⅜″-deep grooves to hold the grids ¾″ from each edge on the inside face. Assemble the surround with screws, and hang the completed rack on your toolboard or shop wall.

–Harvey Charbonneau, Ocala, Fla.



Hook up a shop vacuum to collect some dust

You don't have a built-in dust-collection system in your shop. Instead, you try to collect dust and chips with your shop vacuum when you're doing a lot of cutting, sanding, or routing. You position the hose alongside your work area, but it just won't stay put on its own.



TIP: An S-hook will hold the hose in position for you. Just drill a hole in the side of the hose (or the nozzle) about ½″ from the open end. Insert an S-hook (available at hardware stores) in the hole. Then, hold the hose in position by inserting the other end of the hook into a hole drilled in your workbench or tool table.

–Patrick Smith, Calgary, Alberta

Continued on page 14

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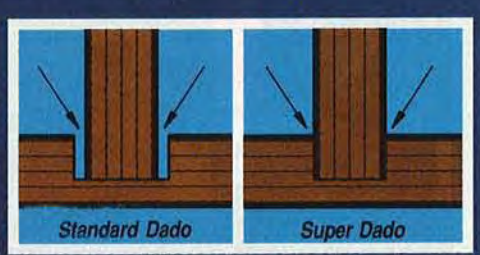

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TIPS FROM YOUR SHOP (AND OURS)

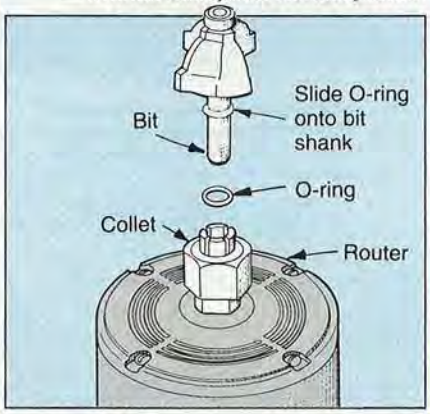
Continued from page 12

O-ring ends "oh, darn!" when changing router bit

The edge-forming router bit you're chucking keeps sliding all the way down in the collet, but it needs to be higher. With both hands occupied with collet wrenches, you can't hold the bit in position.

TIP: Slide a rubber O-ring onto the router-bit shank before you insert it into the collet. (You'll find 1/4"- and 1/2"-inside diameter O-rings in the plumbing aisle of the hardware store.) Position the bit at the height you want, and slide the O-ring down to the collet face. Now, you can tighten the collet nut while the O-ring holds the bit for you.

—William Sand, Morristown, Minn.



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- Our drill guide for pocket screw holes works great for those places where clips, cleats, or corner braces just won't do. See it on *page 76*.
- If you don't need the entire lumber storage rack shown on *page 42*, build only the horizontal support system.
- Adapt your own patterns to the technique described on *page 68* for beautiful wall hangings. Or, incorporate the patterns into boxes or other decorative projects.

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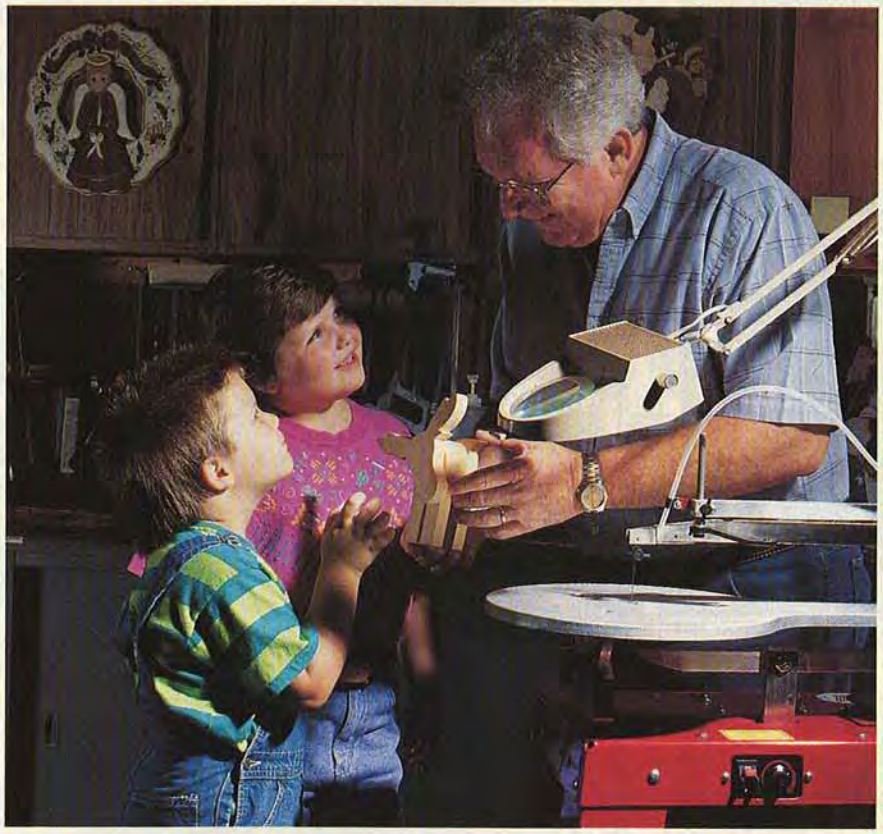

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TALKING BACK

Print this article

We welcome comments, criticism, suggestions, and even compliments. Send your correspondence to: Talking Back, Better Homes and Gardens® WOOD® magazine, 1912 Grand Ave., Des Moines IA 50309-3379.

Help save the butternut

As both a subscriber to *WOOD* magazine and a forest pathologist, I was disappointed that the profile on butternut (October 1992) did not mention Butternut Canker, a serious threat to the species. This disease has caused a serious decline of butternut over the last 25 years.

The U.S. Forest Service has an aggressive breeding program to save the butternut, gathering material from apparently resistant trees for use in breeding resistant planting stock to help reestablish the species. The Forest Service allows heavily infected, unhealthy, and dead trees to be harvested, while evaluating the remainder for their resistance to the disease.

The majority of the butternut trees are on private land. Many land owners, fearing that their trees may become infected, schedule pre-emptive salvage cuts and may be destroying potentially resistant breeding stock.

The policy of the Forest Service will lead, in the short run, to a decreased supply of butternut, and an increased price. In the long run, the species may be brought back. It is not only the tropical hardwoods we must protect, the domestic resources also need our protection.

Martin Mackenzie, Morgantown, W. Va.

Two ways to hone, Mate

I read your "Products that Perform" column in the June 1993 issue reviewing the Hone-Mate. The article said to dip the Hone-Mate in oil, and then give the knives a few strokes. The instructions I received with my Hone-Mate say nothing about dipping it in oil. Which way is correct?

Herbert Grashoff, St. Charles, Mo.

Both ways are correct, Herb. We contacted Woodworker's Supply, and we were told that the stone could be used either wet or dry, and that the use of a lightweight oil will help keep the Hone-Mate clean. Bob McFarlin, who tested the tool, suggested using no more than a drop or two of light oil on the knives to reduce the necessary clean-up. Wipe the oil off the stone when finished to prevent a buildup of small metal particles.

Continued on page 19

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TALKING BACK

Continued from page 16

Tying up loose ends on dust-control grounding

After reading your recent articles on dust-collection systems, I still need some clarification. I'm not certain how and where to hook the starting and ending points of the ground wire that runs through the PVC pipes to reduce static. Should I hook one end to the dust collector and try to hook the other ends at each tool? Can I simply run the wire to the last joint in the pipe/hose system where it connects with the tool?

—Mark Lewis, Ocean Springs, Miss.

Good questions, Mark. First, you only need to ground the system in one place, such as to a stationary tool that is grounded itself, or to a cold water pipe. Then, extend the grounding wire—that can be any bare metal wire (braided wire is not necessary)—through the system's pipes. You don't have to extend through the entire length of the system, but the more area you cover, the less occurance of static buildup. Anchor the ends of the wires to the PVC pipe by drilling a small hole, running the wire through and tying it off. Fill the hole with silicone caulk.

Tissue box cover-up gets foam-rubber holders

I have a suggestion for the "Classy Tissue Box Cover-Up" in the September 1992 issue of *WOOD*. Instead of the two nails and rubber band to hold the tissue box inside, I used four 1x2" pieces of ¼" foam. I used a hotmelt-glue gun to stick one piece to each side. This makes it easier to get the tissue box in and out of the cover-up.

—Dennis Guerieri, Baltimore, Md.

Organic book backs quassia

I'm writing in reference to the reader question on quassia. You can probably find quassia chips at any natural foods grocery or herbal supply house. While you're there, pick up a book called *Back to Eden* by Jethro Kloss. Here's what he says about this amazing wood:

"Quassia tea is an excellent tonic to tone up a run-down system. It will expel worms . . . and is a wonderful remedy to destroy the appetite for strong drink. Quassia is good for fevers, dyspepsia, and rheumatism."

—Kim Badger, Charlotte, N.C.

Continued on page 20

WOODWORKER II - Best on TABLE SAW

With this ONE ALL PURPOSE blade (40 Teeth) you can SMOOTH RIP & CROSSCUT 1"-2" ROCKHARDS and SOFTWOODS with **smooth-as-sanded surface.** PLY-VENEERS (oak/birch) crosscut with NO BOTTOM SPLINTER.

- Mostly 1/8 kerf 15°, ATB and 20° face hook (easyfeed).
- DOUBLE HARDER and 40% STRONGER CARBIDE.

- Ends **blade changing** (does rip, combo and crosscut).
- Ends **scratchy saw cuts** (for the rest of your life).
- Ends **second step finishing** (jointing or sanding).
- Ends **cutting 1/16" oversize** to allow for RESURFACING.
- Buy and **sharpen ONE** blade instead of 3 (24T rip, 50T Combination, 80T Crosscut).
- *Strongly* recommend our *.001* flat **large stiffener-dampener** against out side of blade for smoothest, quietest cuts by this and any other blade.
- Use 30T if ripping mostly 2" - 3" hardwoods.
- Side wobble held *.001* - others .004/.010 is common! RAISE for THICK woods, LOWER for THIN woods and *perfect cut everything!* All 5/8" holes, unless otherwise noted.

	List	SALE		List	SALE
14" x 40T x 1" BORE	$215	$149	9" x 40T	$146	$109
14" x 30T x 1" "	195	139	30T	125	99
12" x 40T x 1" "	183	129	*8-1/4" x 40T 3/32	136	99
12" x 30T x 1" "	162	119	8" x 40T 3/32	136	99
10" x 40T 1/8 & 3/32	156	119	30T 3/32	115	89
30T 1/8 & 3/32	135	99	7-1/4" x 30T 3/32	112	69
			New 6" x 40T 3/32	139	89

5/8" holes std. Boring up to 1-1/4"
$7.50 extra - Shipping $4.50

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Also help all your other blades to cut better.
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6" - $25

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Parallel and flat to .001 • 7" and larger available.

5/8" holes std. Boring up to 1-1/4" $7.50 extra.
Others available. Add $2.50 Shipping.

WOODWORKER I - For TABLE and RADIAL SAW

this trim and crosscut ALL PURPOSE blade gives scratch free POLISHED cuts on all materials RIP or CROSSCUT up to 2".

- All 60T and 3/32" *THIN* kerf 30° ATB and 5° face hook on 10" dia and under. 12" and 14" are 20° ATB 1/8" K.
- DOUBLE HARDER and 40% STRONGER carbide.
- THIN KERF:
  Saves 1/3 wood loss on each cut, radial or table. Feeds easy when used for moderate rip and crosscut on table saw. **Reduces "JUMP IN"** greatly for better "PULL CONTROL". Practically **eliminates bottom splinter** on RADIAL-CROSS CUT.
- Totally stops ALL bottom and top splinter on ply veneers in push-cut mode on RADIAL.
- Our STIFFENER STRONGLY RECOMMENDED AGAINST outside of blade only for best cuts.

Made and serviced in USA for your benefit.

	List	SALE
14" x 60T x 1" 1/8"	$224	$159
12" x 60T x 1" or 5/8" 1/8" K	198	139
10" x 60T x 5/8" 3/32" K	162	129
9" x 60T x 5/8" 3/32" K	156	119
8" x 60T x 5/8" 3/32" K	150	109
New 8-1/4" x 40T x 5/8" 3/32" K	136	99

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OUT PERFORMS 29 OTHER DADO SETS *Wood Magazine*, Oct. 91

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8 - 5/8" Bore List $321/**SALE $289** • 10 - 5/8" & 1" Bore List $389/**SALE $349**

For HOLZ-HER VERTICAL PANEL SAW 220mm x 30mm Bore

50 Teeth CONCAVE FACE	80 Teeth FLAT FACE
List $162 SALE $139	List $204 SALE $159

(for use with or without 2 knife scorer)

For STREIBIG VERTICAL PANEL SAW 300mm x 30mm Bore

60 Teeth CONCAVE FACE	100 Teeth FLAT FACE
List $238 SALE $179	List $263 SALE $179

DURALINE Hi-AT For TABLE & RADIAL SAW

(very good on chop saw too!) STOP SPLINTERING those SPLINTERY OAKS, HARDWOOD VENEERS and *thin* 2 SIDE LAMINATES ON PARTICLE BOARD.
FOR FASTER FEED RATES AND MORE ABSOLUTE SPLINTER CONTROL.

NEW PRICES EFFECTIVE SEPT. 1, 1993

DURALINE HI-AT

Note: *Fine Woodworking Editorial Nov./Dec. 1988 No. 73, pg. 65, S.N. recommends high alternating top bevel (ATB) thin kerfs and large blade stiffeners for smoothest cuts on RADIAL SAW, etc.*

Jim Forrest, President and designer microscoping cutting edge.

All 5/8" holes. Boring up to 1-1/4" $7.50 extra
Larger holes - time basis. Shipping $4.50

	List	SALE
7-1/4" x 60T 3/32"	$149	$129
8" x 80T 1/8" & 3/32"	202	$169
9" x 80T 1/8" & 3/32"	207	$179
10" x 80T 1/8" & 3/32"	207	$159
Special Sale on 10" Only $159		
12" x 80T x 1" 1/8"	212	$181
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14" x 80T x 1"	232	$197
14" x 100T x 1"	266	$226
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16" x 100T x 1"	294	$243

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Delta	9" x 80T x 5/8"	204	119
Ryobi-Makita	10" x 80T x 5/8"	207	129
Hitachi	12" x 80T x 1"	229	139
Ryobi-Makita	14" x 100T x 1"	266	179
Hitachi	15" x 100T x 1"	277	189

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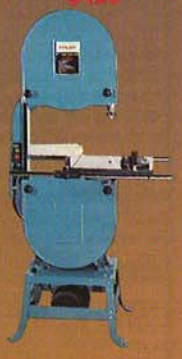

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1" X 30" BELT SANDER
MODEL EN-SN130 $60

TALKING BACK

Continued from page 19

Watch that rotation!

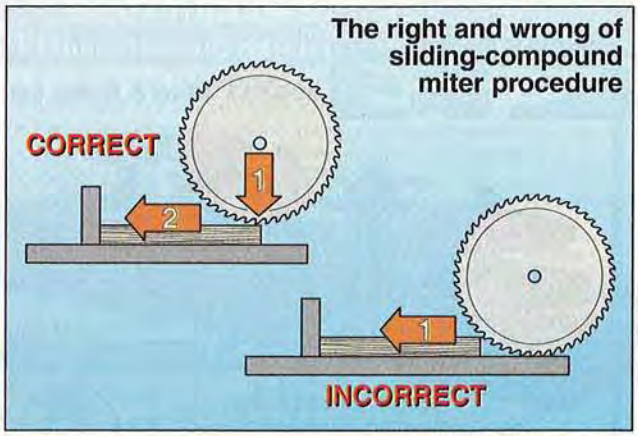
In all of the woodworking magazines and woodworking shows I have seen, everyone using a radial-arm saw will pull the blade through the work, cutting with the rotation of the blade. For safety's sake, I would think the saw should be pushed through the work. As a machinist, I was taught to feed the work into the rotation of the blade. Could you explain the reason for the different procedure with the radial arm saw?

James, B. Pollock, Wimberly, Texas

For an answer to your question Jim, we contacted Dave Hazelwood, a Sears/Craftsman power tool specialist. He said that when you crosscut with a radial-arm saw, you should pull the blade through the work to force the wood against the rear fence and down to the table. Starting the crosscut with the blade at the front of the table, and pushing through, could lift the front of the board and possibly throw the board back up and away from the table. This could damage both the wood and the radial-arm saw.

Straight-line ripping of wood with the radial-arm saw does require pushing the wood into the rotation of the saw blade. Feeding the wood in the direction of the saw blade's rotation while ripping could cause the blade to grab the wood and pull it quickly through the saw, often along with any hands or fingers holding the wood.

Sliding-miter saws do have instructions that say you should push the blade through the wood while crosscutting. Dave stated that the recommended procedure for using this tool is to pull the saw out to the front of the material to be cut, lower the blade, and start the cut into the wood at the same time. Then push the saw through the wood to finish the cut as shown below, left. *Starting the crosscut with the sliding-miter saw in front of the wood with the blade already lowered has the same potential for grabbing and throwing the wood as does the radial-arm saw.*



Continued on page 23

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Fellow Woodworkers,

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Extended use of CMT bits gives testimony to their high grade fatigue-proof steel shanks and their edge holding carbide. Once you try CMT tools, you will agree that they deserve all the applause they are receiving from woodworking journals and woodworking experts worldwide.

Patrick Spielman, Author
Router Basics, Router Handbook, Router Jigs and Techniques

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800-502 10-pc. 1/4" & 1/2" shank set for Leigh Jig .....List: ~~$180.40~~ ....Sale: $129.00
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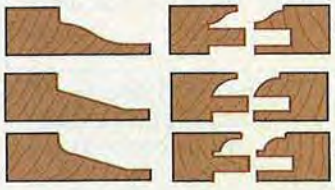

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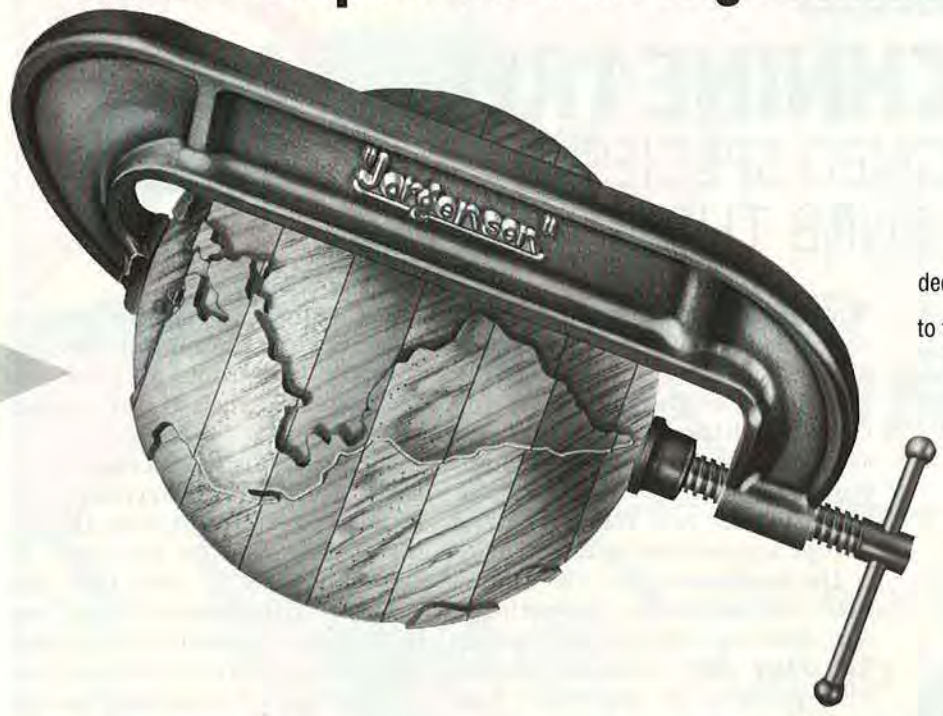

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TALKING BACK

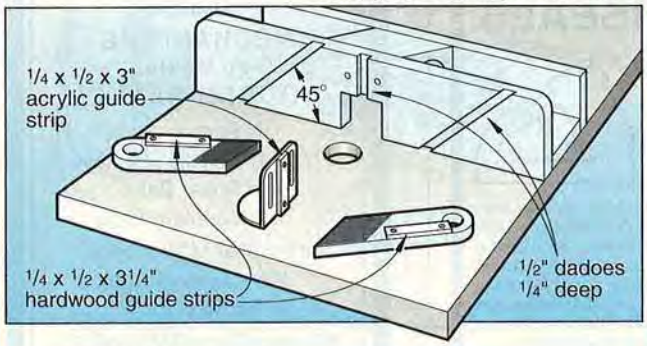
Continued from page 21

A guide for router fence improvements

I built the router fence system shown in the January 1993 issue of *WOOD*® Magazine, and I made a few improvements. First, I added a ¼ x ½ x 3" acrylic guide to the back of the bit guard. This piece, which fits into a corresponding groove in the router fence, makes the guard easier to adjust up and down, and it eliminates the rocking motion of this piece.

I also equipped the feather boards with similar wooden guides that fit into 45° slots in the fence. This allows finer adjustment of the feather board, and permits movement in one axis only.

Phillip J. Quedens, Berlin, Conn.



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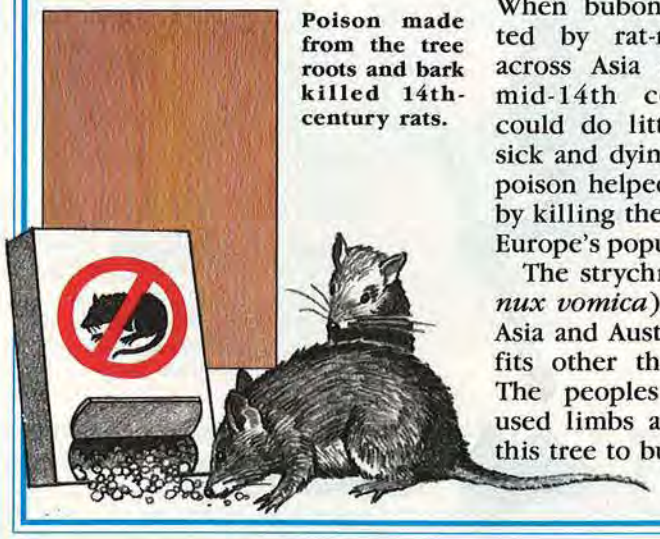

Poison made from the tree roots and bark killed 14th-century rats.

When bubonic plague, transmitted by rat-riding fleas, swept across Asia and Europe in the mid-14th century, physicians could do little but comfort the sick and dying. Before strychnine poison helped curb the epidemic by killing the rats, roughly half of Europe's population perished.

The strychnine tree (*strychnos nux vomica*), native to Southeast Asia and Australia, provides benefits other than varmint control. The peoples of Southeast Asia used limbs and boards cut from this tree to build their huts and to fence animals. Primitive hunters made arrow poison for hunting from the bark, roots, and disc-like seeds in the tree's fleshy orange-red berries.

In the 1800s, physicians added small amounts of strychnine to tonics as a stimulant, even though it's so bitter it can be tasted in concentrations of one part per 400,000. This powerful drug may have gotten its start killing game, but today, doctors prescribe controlled doses to increase muscular activity, and as an antidote for alcohol and drug poisoning.

Illustration: Jim Stevenson

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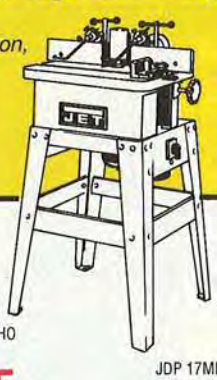

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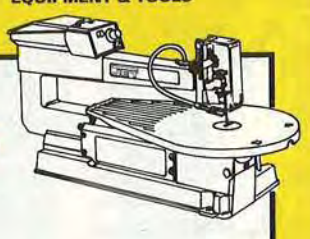

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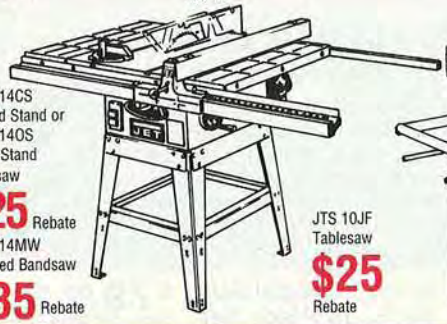

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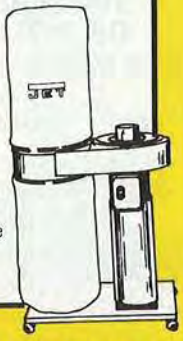

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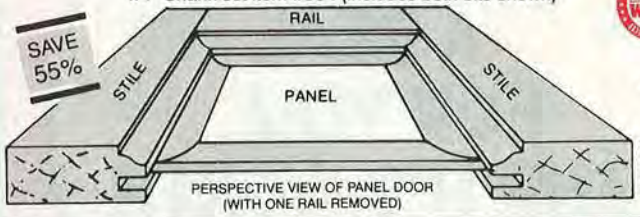

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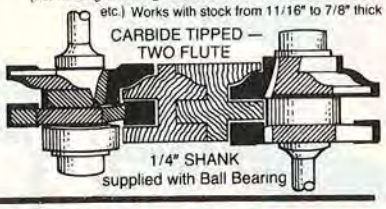

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#601	Solid Carbide	1/8" Spiral Cutter	*Proper Adaptor Will Be Supplied	1/8"	1/2"	1/4" *	$ 9.00
#603		1/4" Spiral Cutter		1/4"	3/4"	1/4"	$12.00
#903		1/4" Spiral Cutter		1/4"	3/4"	1/2" *	$12.00
#904		3/8" Spiral Cutter		3/8"	1"	1/2" *	$24.00
#905		1/2" Spiral Cutter		1/2"	1 1/2"	1/2"	$29.00
#530		3/16" Edge Beading	3/16" Dia. of Circle		1/2"	1/4"	$15.00
#531		5/16" Edge Beading	5/16" Dia. of Circle		1/2"	1/4"	$15.50
#350		1/8" Round Over	1/8" R	3/4"	3/8"	1/4"	$11.00
#351		3/16" Round Over	3/16" R	7/8"	1/2"	1/4"	$11.00
#230		1/4" Round Over	1/4" R	1"	1/2"	1/4"	$12.00
#353		5/16" Round Over	5/16" R	1 1/8"	1/2"	1/4"	$14.00
#209		3/8" Round Over	3/8" R	1 1/4"	5/8"	1/4"	$15.00
#355		1/2" Round Over	1/2" R	1 1/2"	3/4"	1/4"	$17.00
#655		1/2" Round Over	1/2" R	1 1/2"	3/4"	1/2"	$17.00
#656		3/4" Round Over	3/4" R	2"	7/8"	1/2"	$21.00
#199		Multiform Moulding	Unlimited Patterns	2 1/4"	2"	1/2"	$40.00
#205		1/4" Cove	1/4" R	1"	1/2"	1/4"	$12.00
#206		3/8" Cove	3/8" R	1 1/4"	9/16"	1/4"	$13.00
#207		1/2" Cove	1/2" R	1 1/2"	5/8"	1/4"	$14.00
#643		1/2" Cove	1/2" R	1 1/2"	5/8"	1/2"	$15.00
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#231		5/32" Roman Ogee	5/32" R	1 1/4"	15/32"	1/4"	$16.00
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#506		1/2" Pattern	Flush Trim	1/2"	1"	1/4"	$15.00
#508		3/4" Pattern	Flush Trim	3/4"	1"	1/4"	$17.00
#366		1/8" Slot Cutter	3/8" Deep	1 1/4"	1/8"	1/4"	$14.00
#368		1/4" Slot Cutter	3/8" Deep	1 1/4"	1/4"	1/4"	$14.00
#204		3/8" Rabbeting	3/8" Deep	1 1/4"	1/2"	1/4"	$13.00
#670		3/8" Rabbeting	3/8" Deep	1 1/4"	1/2"	1/2"	$14.00

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#211		3/8" Core Box	round nose	3/8"	3/8"	1/4"	$10.00
#212		1/2" Core Box	round nose	1/2"	11/32"	1/4"	$13.00
#418		3/4" Core Box	round nose	3/4"	5/8"	1/4"	$15.00
#213		1" Core Box	round nose	1"	3/4"	1/2"	$17.00
#548		Lockmitre		2"	7/8"	1/4"	$32.00
#214		1/4" Straight	plunge cutting	1/4"	3/4"	1/4"	$ 6.50
#216		3/8" Straight	plunge cutting	3/8"	1"	1/4"	$ 6.50
#474		1/2" Straight	plunge cutting	1/2"	1"	1/4"	$ 7.00
#219		3/4" Straight	plunge cutting	3/4"	1"	1/4"	$ 9.50
#779		3/4" Straight	plunge cutting	3/4"	1 1/2"	1/2"	$10.00
#462		1/2" Bull Nose	1/2" Dia. of Circle		3/4"	1/4"	$16.00
#464		3/4" Bull Nose	3/4" Dia. of Circle		1"	1/4"	$21.00
#764		3/4" Bull Nose	3/4" Dia. of Circle		1"	1/2"	$21.00
#545		Tongue & Groove	Straight	1 5/8"	1"	1/4"	$29.00
#845		Tongue & Groove	Straight	1 5/8"	1"	1/2"	$29.00
#546		Tongue & Groove	Wedge	1 3/16"	1"	1/4"	$29.00
#846		Tongue & Groove	Wedge	1 5/8"	1"	1/2"	$29.00
#450		1/8" Beading	1/8" R	3/4"	3/8"	1/4"	$11.00
#233		1/4" Beading	1/4" R	1"	1/2"	1/4"	$13.00
#454		3/8" Beading	3/8" R	1 1/4"	5/8"	1/4"	$15.50
#455		1/2" Beading	1/2" R	1 1/2"	3/4"	1/4"	$17.00
#500		3/8" Flush Trimming		3/8"	1/2"	1/4"	$ 7.00
#501		3/8" Flush Trimming		3/8"	1"	1/4"	$ 7.50
#503		1/2" Flush Trimming		1/2"	1"	1/4"	$ 8.50
#221		1/2" Flush Trimming		1/2"	1 3/16"	1/2"	$ 8.00
#558		Thumbnail		1 3/16"	3/8"	1/4"	$18.50
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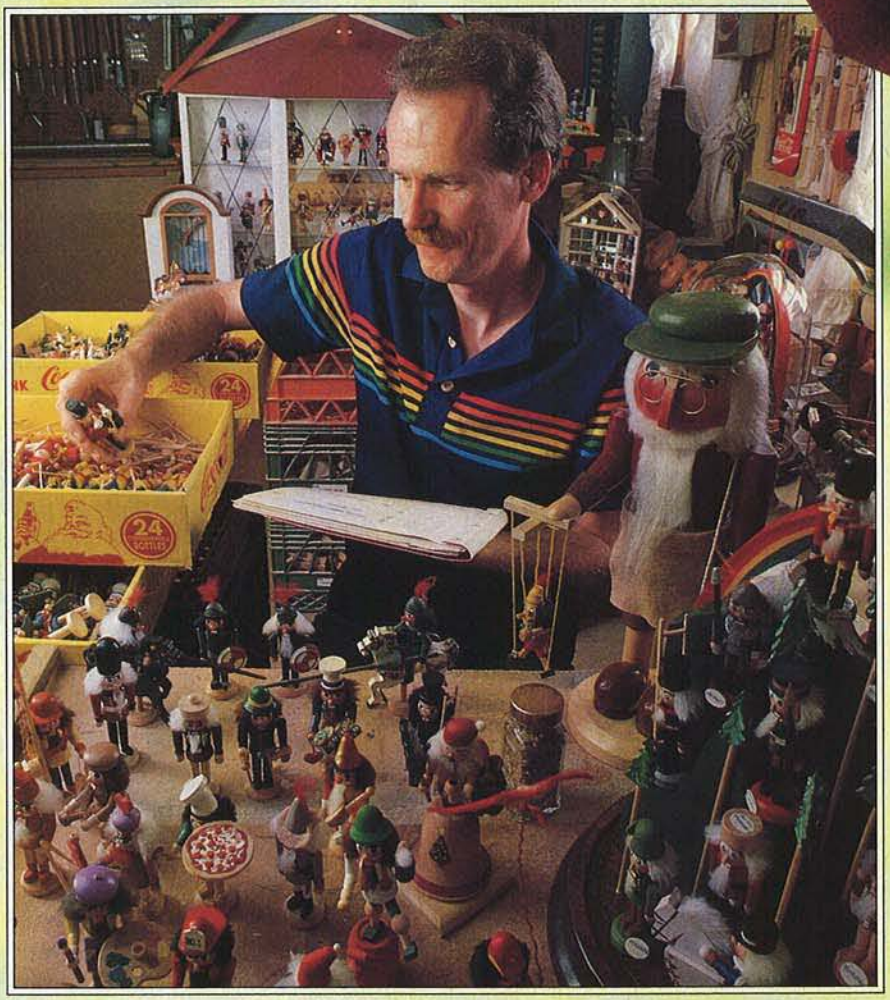
NUTCRACKERS
SUITE AS CAN BE

Mellville the fisherman, Hoffman the writer, Anthony the clockmaker, Woodson the forester, and dozens more 4"-tall wooden figures make up the Coriander Collection of miniature nutcrackers. They're all the work of Glenn Crider, a 35-year-old with a sense of humor who manages a unique balancing act. He produces fun figures, has still more fun marketing them, yet maintains a consultant's job.

Continued



Inside Glenn's backyard workshop, nutcrackers appear to take over. Their small size makes it possible for him to build and stock hundreds of different ones in his cottage-sized building. The large figure is a "smoker" or incense burner.

Print this article

NUTCRACKERS

Based in a gingerbread-trimmed, cottage-style workshop behind his home in Mechanicsville, Virginia, Glenn's T.R.C. Designs (T.R.C. stands for Three-Ring Circus) focuses on the aura of Christmas and the association with it of nutcrackers. "Even though nutcrackers have been around for about 300 years, they've only been tied in with Christmas through the Nutcracker Ballet." (See the box, *below right*, for the history of the nutcracker.) "People see it [the ballet], then decide that somebody is going to get a gift of a nutcracker," says Glenn, grinning nearly ear to ear. "And whammo! That's the beginning of a collection."

And where do potential collectors find Glenn and his parade of nutcrackers? At Christmas shows in and around Richmond. Through November and early December, Glenn sets up his booth among the other vendors of holiday crafts. The rest of the year—like the role of Santa's elf in which he casts himself—he's busy planning and building prototypes, producing figures, and filling mail orders from his inventory.

Built-in growth for collectors

Glenn named his growing array of nutcracker offerings "The Coriander Collection" because their tiny mouths are just the right size to crack a BB-like coriander seed. "But I couldn't call them coriandercrackers!" he laughs.

The unusual size of his nutcrackers—that now include 25 separate characters—didn't come about by accident. Like so many projects a woodworker builds, the decision to go small was dictated by equipment.

"When I started out to make nutcrackers, I only had a mini-lathe that I used for clock repair and small toys, along with some pretty standard tools," Glenn explains. "The largest diameter I could turn was an inch. And a 1"-diameter body scaled out to a figure 4" tall.

"For some reason that size worked, and they sold," he says. "People see that they can collect and display 100 of them, easy. With traditional-sized nutcrackers 15" to 18" tall, they're restricted."

And compared to a full-sized nutcracker at $100, Glenn's sell for under $20. By adding a few clever marketing strategies, he continues their popularity.

The Danish guard reveals his preturned birch parts that include cup pegs, balls, and other familiar shapes.

NUTCRACKERS WEREN'T ALWAYS MADE

Nearly 300 years ago, the once-rich deposits of ore around Erzgebirge, Germany, were becoming depleted. The people faced hard times, or as was the German saying, their lives became "hard as nuts."

The creator of the nutcracker presumably was an Erzgebirge craftsman who began carving in order to support his family during the local economic depression. Among his carvings was an imaginative figure of a soldier with a hinged jaw and lever to symbolically 'crack the nut.' The figure caught on, and others began to carve the new 'nutcracker.' And almost always, the figures depicted were ones of authority—soldiers, kings, civil servants, and such—those able to crack the figurative nut. Thus, nutcrackers be-

"From the beginning, I've numbered the nutcrackers in the sequence of their creation," says Glenn. "The Danish guard was the first one, number 201."

Like baseball cards, Glenn's numbered nutcrackers appeal to collectors. But according to him, no one asks for them by number, "They say 'Do you have any more of Woodson? Or Tchaikovsky?'. They become personalities."

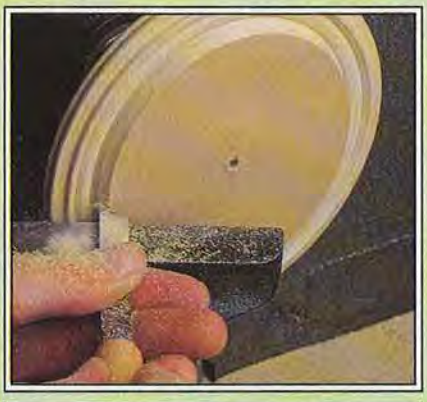
And again, like baseball cards from a star player's rookie year, Glenn's characters become rare. That's because he only produces so many (ranging from 12 to 36) of each figure every year after they're first introduced. As the number of figures in the line grows, the number of available earlier ones declines. Eventually, older ones won't be produced.

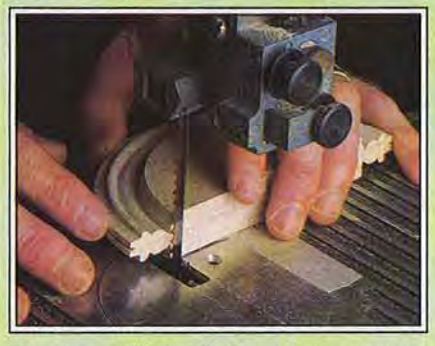
Parts from other parts

Being a practical man, Glenn doesn't hesitate to use ready-made parts for his hand-assembled nutcrackers. In them (see photo on *page 27*) you'll find hardwood Shaker, tie, and mug-rack pegs, toy-wheel axles, balls, plugs, dowels, and some custom parts, all bought from manufacturers.

Of course, he has to turn and saw out the body and its nutcracking components (the jaw, etc.), and modify purchased parts (by cutting a dowel and regluing it for an angled arm, for instance). Glenn also crafts all the tiny accessories—the swords, the pizza trays, all the adornments. For these tiny parts, he employs a woodturning technique long used in Germany for nutcracker manufacture: hoop turning. In the photos *below*, Glenn demonstrates the technique to produce the tiny gingerbread-man cookie shapes that eventually will decorate the tray held by Cardamon the baker.

Then there's the handpainting and the addition of small tufts of craft. Glenn also shapes, fits, and applies snips of cloth to many of the figures. In the end, there could be many hours of labor in each—that is, if Glenn had to do it all by himself. Rather, cottage-industry style, he subcontracts much of the work to local help.

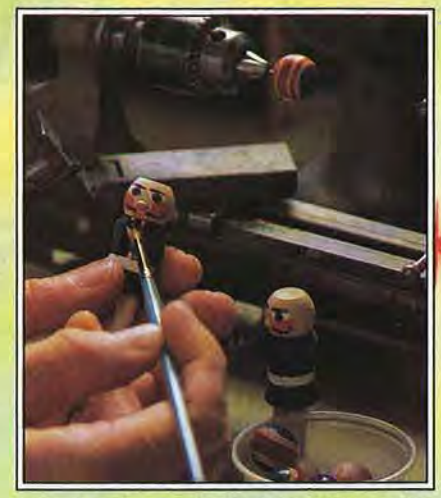




Turning a "hoop," Glenn's tiny gouge cuts the profile of a gingerbread cookie in yellow poplar. At the bandsaw, he saws off the profiled hoop and slices 550 tiny gingerbread-man shapes from it.

Nutcrackers to no end

Glenn's first nutcrackers were standard figures—a soldier, a forester. Buyers could relate to them, he thought. He soon discovered, though, that nutcrackers didn't have to fit the Old World mold.



Tiny heads receive details with acrylic paint. They'll be the models that guide his helpers' work. In the background, a ball remains on the lathe after striping.

"I was a little afraid to do an American-style nutcracker at first," says Glenn. "But when I designed Cardamon the baker, the door just swung open. That is, people liked him. The first day of the first Christmas show, I sold all the bakers. The rest were left.

"I found out that people liked the extra ornamentation, the fun-type stuff," Glenn adds. "Now, I get tons of questions like, 'Do you have a nurse? A doctor? Or one that works at a computer?' Then I have to explain that I try to issue no more than four new characters each year. I don't want to be producing 200 different nutcrackers at one time because I want each nutcracker to be the best product I can possibly make."

So you can make a nutcracker, Glenn designed one just for WOOD® magazine readers. Watch for it in a future issue.

Captivated by Christmas collectibles?

For a brochure describing Glenn's miniature nutcrackers, send a SASE to: *T.R.C. Designs, P.O. Box 456, Mechanicsville, VA 23111.*

Written by Peter J. Stephano
Photographs: Steve Uzzell

TO CRACK NUTS

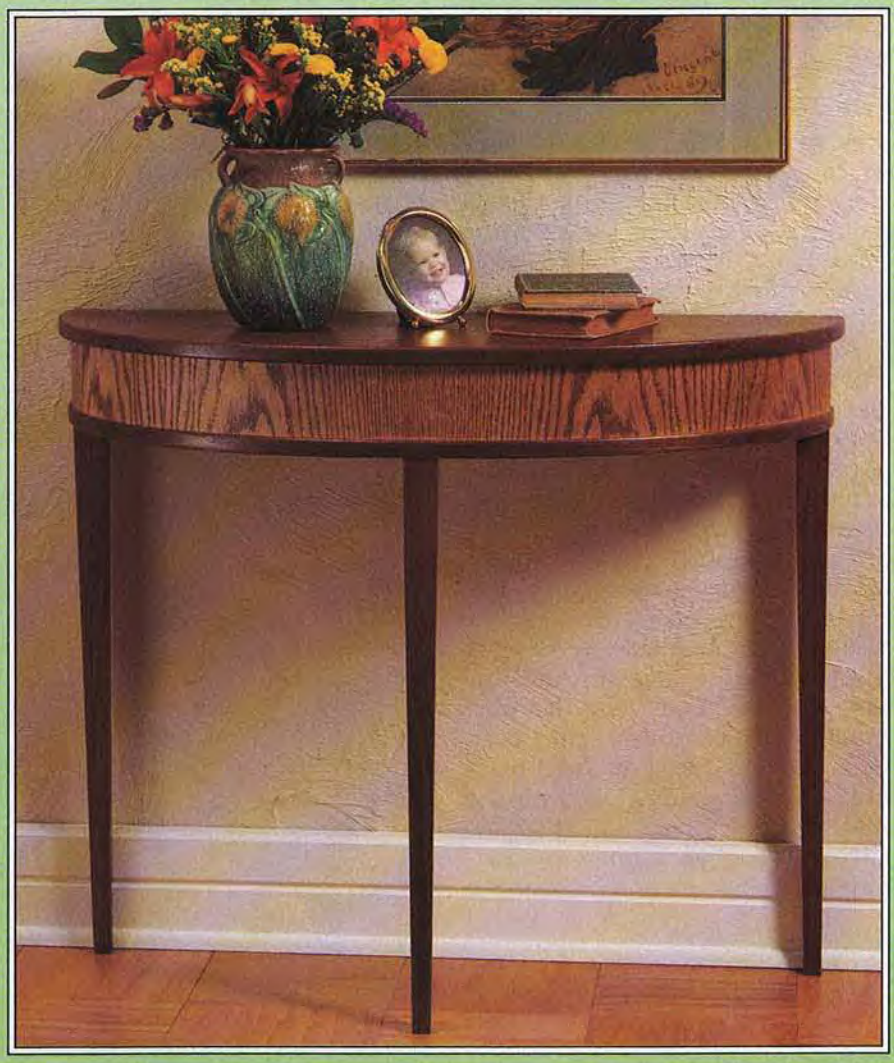
came objects of political satire, not useful gadgets to crack nuts, as most assume.

In 1816, German writer Ernst Theodor Amadeus Hoffman wrote a fairy tale titled "The Nutcracker and the Mouse King." But it was 1892 when Russian Peter Tchaikovsky composed the the *Nutcracker Suite Ballet*, based on Hoffman's tale.

BOW-FRONT TABLE

A BEATIFUL BLEND OF CONTRASTING HARDWOODS

Does a wall in your home suffer from a sheer lack of visual interest? If so, then let this beautiful bow-front table help you create an area worthy of high praise. As shown at *right*, the table serves as the staging area for numerous complementary decorations. And, from a woodworker's point of view, you'll like learning how to bend wood and taper table legs.



Start by building the form

1 Cut a piece of ¾" plywood to 14×39" for the form base. Using the dimensions on the Lamination Form drawing, mark the screw-hole centerpoints on the bottom side of the base for attaching the 2×4 supports in the next step. Note that the two outside supports get two screws each. Working from the bottom side, drill and countersink a 5⁄32" shank hole at each marked centerpoint.

2 Crosscut seven pieces of 2×4 to 4" long for the form supports. Mark diagonals on one end of five of the supports to find center. Then, mark a dividing line across the width on one end of each of the two remaining supports. Mark the hole centerpoints on these two remaining supports.

3 Drill a 5⁄64" pilot hole 1" deep into each 2×4 support at each marked centerpoint. Using 3" drywall screws (no glue), secure the 2×4 supports to the top face of the base where shown on the Lamination Form drawing. (To allow the five middle supports to pivot and conform to the natural bend of the bowed rail (A), we used only one screw in each.)

4 For aligning the front pieces when laminating the front later, mark a reference line on the center 2×4 support where shown on the Lamination Form drawing.

Here's how to laminate the bowed front rail

1 From one end of a 4×8 sheet of ⅛" oak plywood, crosscut six pieces 48" wide by 4" long (remember to measure length *with* the grain). See the Cutting Diagram for reference.

2 Cover the form and 2×4 supports with waxed paper.

3 Use spring clamps to dry-clamp the plywood strips together with the ends and edges flush. Mark an alignment line across the top

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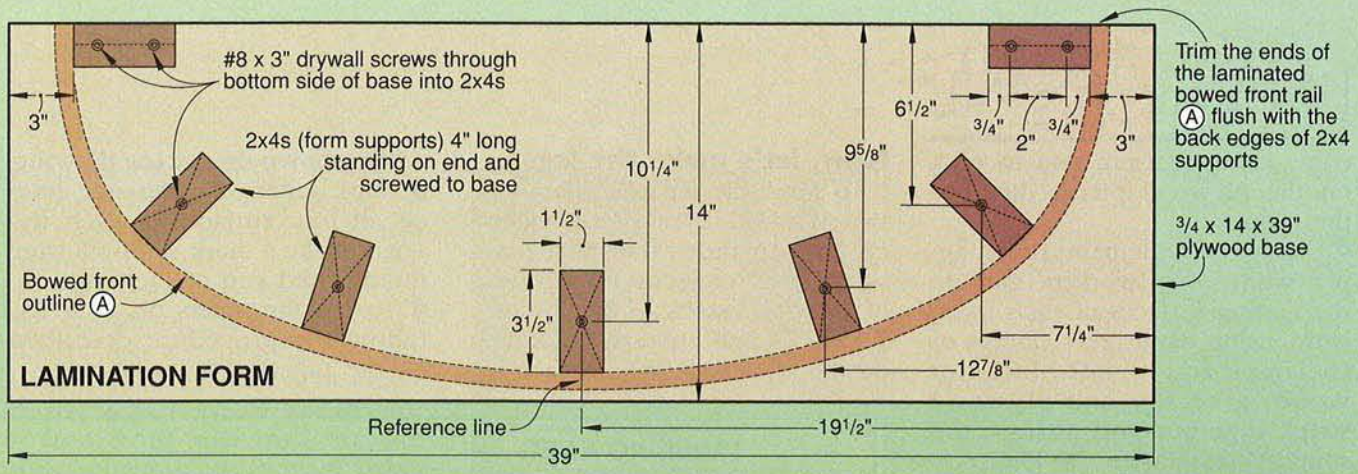
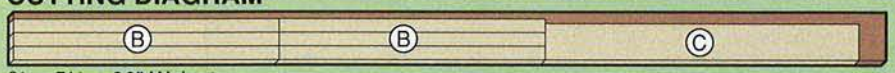
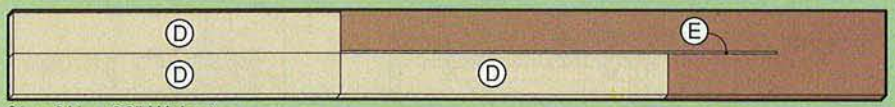


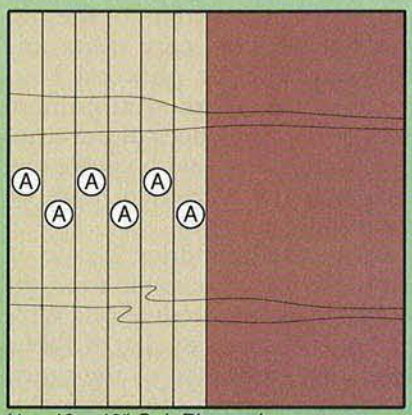
CUTTING DIAGRAM



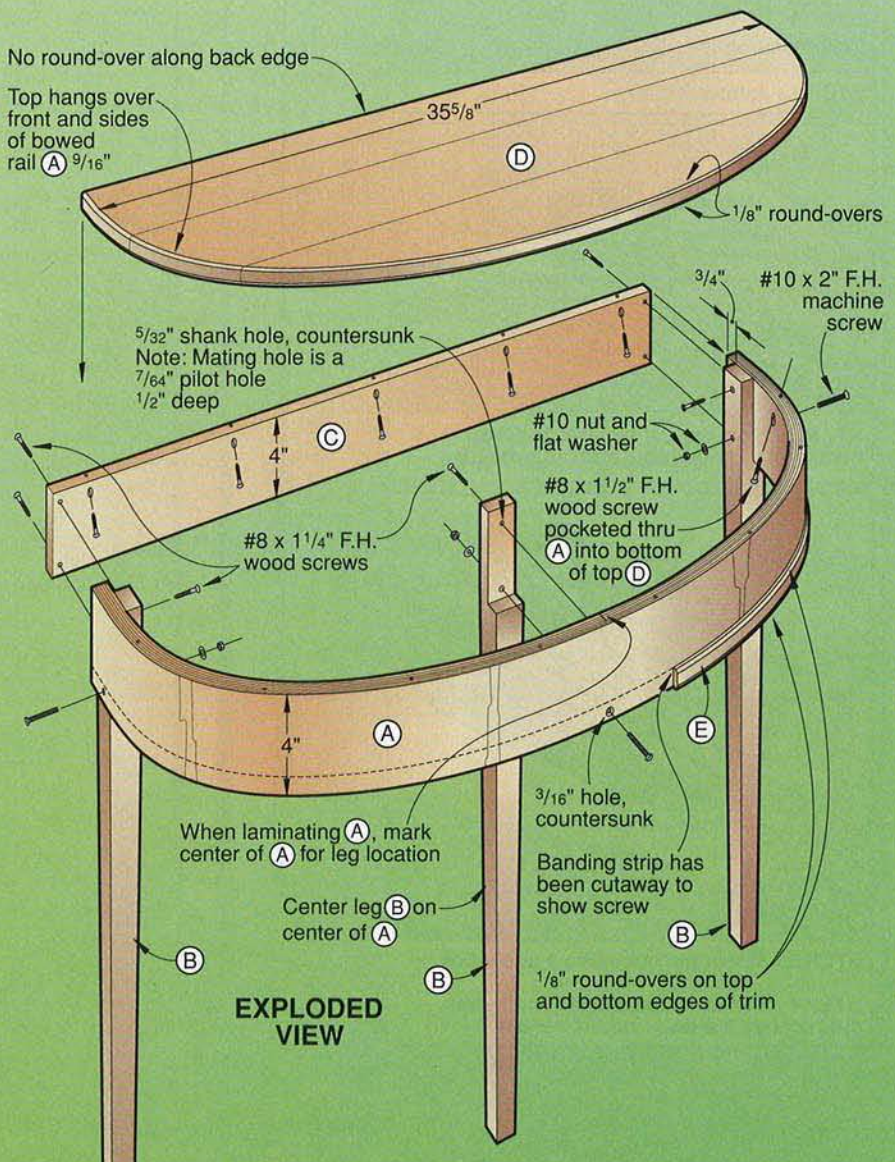
¾ x 5½ x 96" Walnut

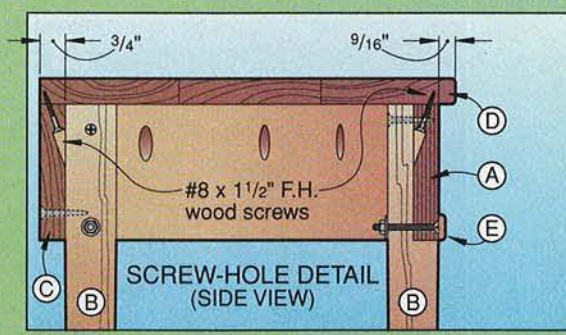


¾ x 9¼ x 96" Walnut



⅛ x 48 x 48" Oak Plywood


No round-over along back edge
Top hangs over front and sides of bowed rail (A) 9/16"
35⅝"
D
⅛" round-overs
¾"
#10 x 2" F.H. machine screw
5/32" shank hole, countersunk
Note: Mating hole is a 7/64" pilot hole ½" deep
C
4"
#10 nut and flat washer
#8 x 1¼" F.H. wood screws
#8 x 1½" F.H. wood screw pocketed thru (A) into bottom of top (D)
4"
A
E
When laminating (A), mark center of (A) for leg location
Center leg (B) on center of (A)
3/16" hole, countersunk
Banding strip has been cutaway to show screw
B
B
B
⅛" round-overs on top and bottom edges of trim
EXPLODED VIEW



Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
A* bwd. rail	¾"	4"	48"	LOP	1
B legs	1½"	1½"	29¼"	LW	3
C back rail	¾"	4"	33"	W	1
D* tabletop	¾"	14"	36"	EJW	1
E* banding strip	3/16"	¾"	50"	W	1

*Initial size.

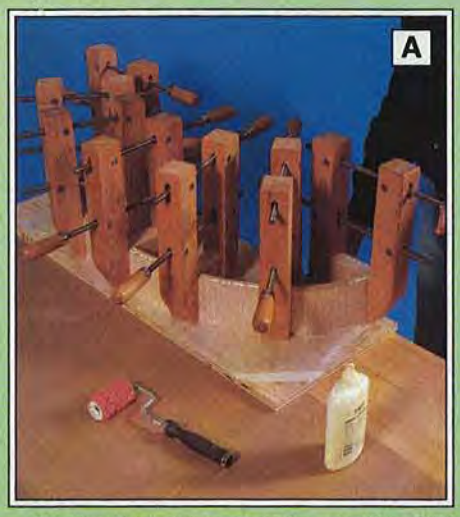
Materials Key: LOP–laminated oak plywood, LW–laminated walnut, W–walnut, EJW–edge-joined walnut

Supplies: 3" drywall screws, #10×2" flathead machine screws with mating flat washers and nuts, #8×1¼" flathead wood screws, #8×1½" flathead wood screws, stain, finish.

edge, centered from end to end, on the plywood pieces. Remove the clamps.

4 Using a 3"-wide paint roller, apply white woodworkers glue to the mating surfaces of each layer. Now, using handscrew clamps or C-clamps and 4"-tall blocks of wood, glue the oak plywood strips together and against the supports as shown in Photo A. Keep the bottom edges of the plywood flush with each other and firmly against the plywood base. Position the marked alignment lines on the top edges of the strips so that they align with each other and with the reference mark on the middle support.

5 Before the glue dries, scrape off as much of it as possible from the top edge of the lamination. Wipe off any squeeze-out that dribbles down the front face of the outermost layer. Allow the lamination to dry overnight.



Secure the plywood strips to the 2×4 form supports with handscrew clamps until the glue dries.

6 Using a handsaw, trim the ends of the lamination flush with the back edges of the form supports. See the Lamination Form drawing for reference.

7 Remove the clamps, and scrape off any remaining glue from the top and bottom edges of the bowed lamination (A). Next, sand both edges smooth. Set the bowed lamination aside for now.

Now, let's make the legs

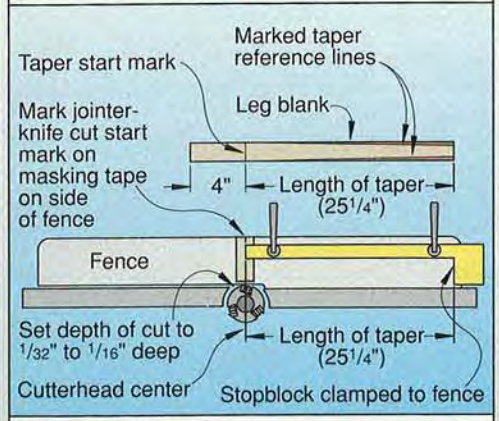
1 To form the legs (B), laminate two ¾×1½×29¼" pieces together face-to-face, use furniture squares, or crosscut three pieces of 1½×1½" stock to 29¼" long.

2 Lay out and cut a ¾×4" notch on the top inside face of each leg where shown on the Leg drawing.

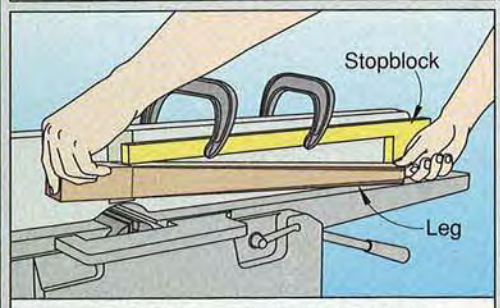
3 Mark taper-cut reference lines on all four surfaces of each leg. Then, make a mark 4" down from the notched end of each leg.

4 To cut the tapers on each leg, follow the procedure described on the Tapering A Leg drawing.

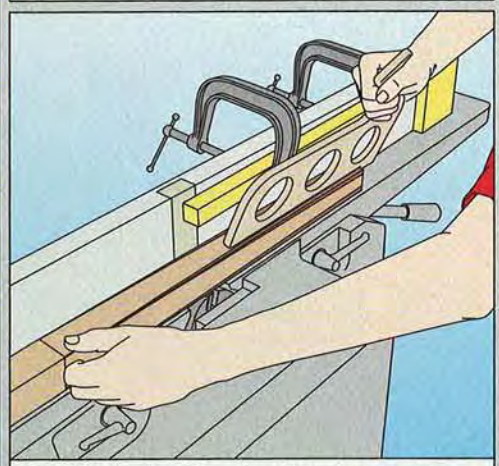
TAPERING A LEG


Taper start mark
Marked taper reference lines
Leg blank
Mark jointer-knife cut start mark on masking tape on side of fence
4"
Length of taper (25¼")
Fence
Set depth of cut to 1/32" to 1/16" deep
Length of taper (25¼")
Cutterhead center
Stopblock clamped to fence

STEP 1 - Jointer setup

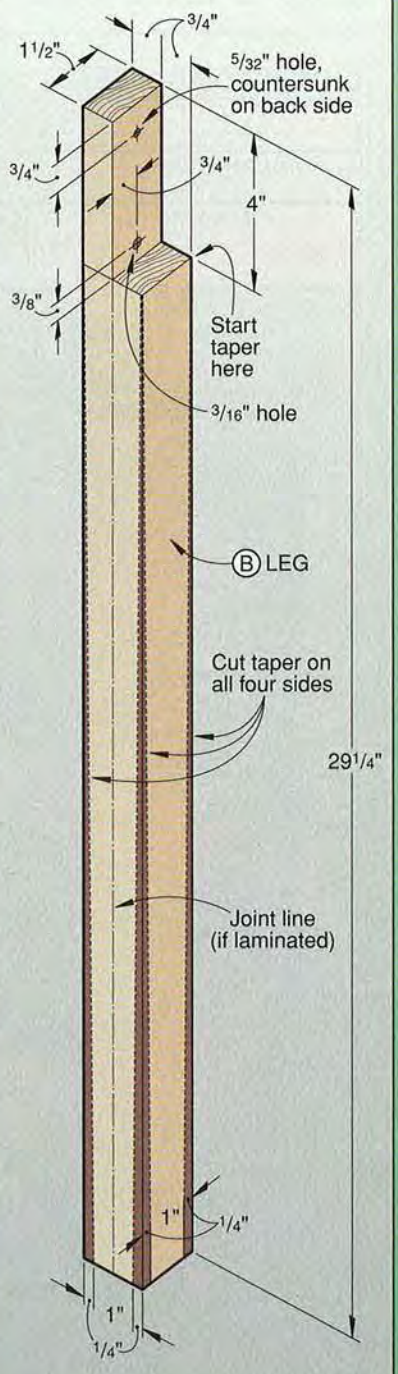


STEP 2 - Start the cut by lowering the leg blank onto jointer table and cutterhead.



STEP 3 - Finish the cut using a pushstick.

STEP 4 - Repeat steps 2 and 3 until your cut reaches the taper reference line.

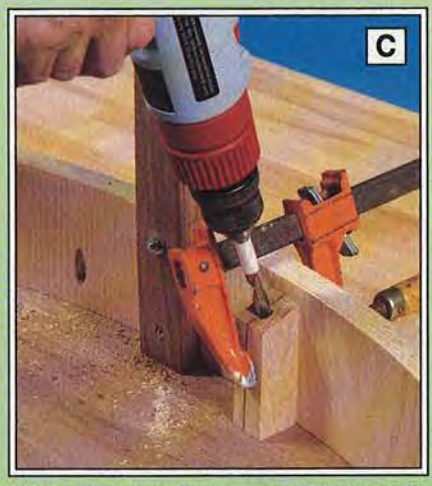


5 Cut the back rail (C) to size.
6 Using the hole sizes stated on the Exploded View drawing, drill mounting holes and screw the two back legs to the back rail (C). Use a framing square to check that the legs are square to the rail.
7 Verify that the alignment marks made when laminating the bowed front still indicate the front center of the bowed front; adjust if necessary. Glue and clamp the center leg, centered on the front rail. Check for square.
8 Drill the mounting holes, and secure the back rail (C) to the front rail/leg assembly.

Topping the table

1 Edge-join enough ¾"-thick stock to form a blank for the tabletop (D) that measures 14" wide by 36" long.
2 To copy the front-rail profile and create a 9/16" overhang on the blank, start by setting the blank good side down on your workbench. As shown in Photo B, position a ⅜" fender washer next to the rail, place the lead of your pencil inside the hole, and trace the overhang outline onto the bottom side of the tabletop blank. (You could also use a compass to mark the 9/16" overhang.)
3 Bandsaw the tabletop to shape. Sand the bandsawed edge to a smooth, continuous arc.

Use a fender washer and pencil to trace the outline onto the bottom surface of the tabletop blank.



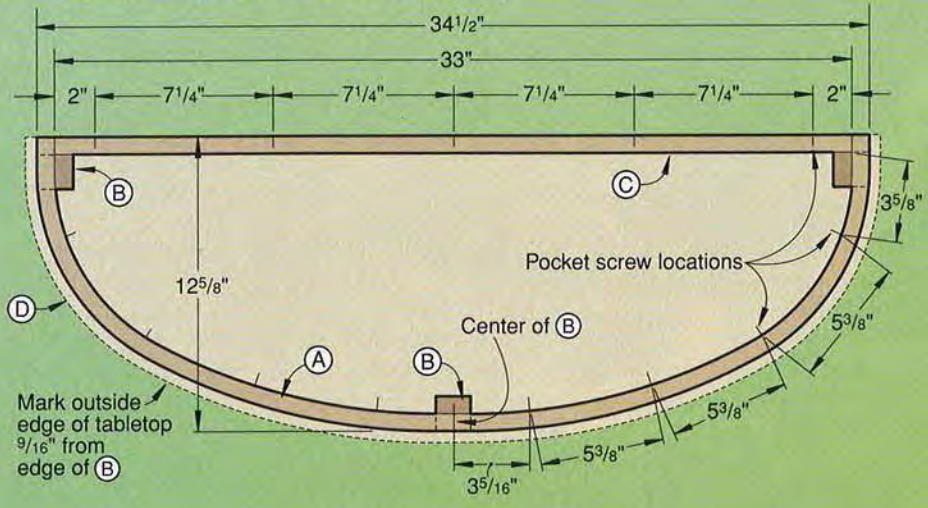
Drill the angled screw holes through the bowed lamination with our shop-built pocket screw-hole guide.

4 Rout ⅛" round-overs along the top and bottom edges of the rounded front (do not rout along the straight back edge). Sand the base and tabletop smooth.
5 To attach the tabletop to the base (front and back rails), start by building the pocket screw-hole jig shown on *page 76*.
6 To strengthen the glue joint joining the legs to the front rail, drill the mounting holes and screw and bolt the three legs to the laminated bowed-front rail (A). See the Exploded View drawing and accompanying Screw-Hole detail for reference.
7 Clamp the tabletop to the base, centered from side to side and with the back edges flush. Next, mark the location reference lines where located on the Pocket Screw-Hole Locations drawing. As shown in Photo C, align the guide with the marks, clamp the guide to the front rail, and drill the angled mounting holes. Drive screws through these holes to secure the tabletop to the base.

Secure the legs, and add the walnut banding trim

1 To form the banding strip (E), rout ⅛" round-overs along one edge of a piece of ¾"-thick walnut 50" long. Then, rip a 3/16"-thick strip from the routed edge.
2 Glue the 3/16"-wide walnut banding strip to the bowed front rail where shown on the Exploded View drawing and accompanying Screw-Hole detail. (We used sliding-head type clamps to hold the strip in place until the glue dried.) Later, trim the ends of the strip flush with the back surface of the back rail.
3 Finish-sand the table and apply the finish. (We used a walnut stain on the oak front rail and left the walnut pieces natural. Then, we brushed on two coats of gloss polyurethane, followed by one coat of satin polyurethane.)

POCKET SCREW-HOLE LOCATIONS



Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: John Hetherington
Illustrations: Kim Downing

GREAT INTRODUCTIONS

13 Woodworking products that brought the house down

Print this article

Shop math in a fraction of the time

If you're like me, you probably enjoy *building* projects more than figuring the math that goes into planning them. Chores such as adding feet, inches, and fractions can really get sticky. So I welcomed the chance to try two calculators for woodworkers.

Tape Mate, the first of these math wizards, lets you add, subtract, divide, and multiply while working in feet, inches, and standard fractions. With it you can also calculate in decimal feet and inches, and compute area and volume in just seconds.

The slim, lightweight calculator fits comfortably in the palm of my hand, or my shirt pocket. As shown in the photo *below*, the Tape Mate comes with a neoprene band that snugly holds the tool onto my 25' Stanley tape measure. Other pluses include its solar cell that eliminates the need for batteries, and an affordable price tag of only $29.

The one drawback I encountered was the tool's small buttons. You must be extra-careful to punch the right button, especially if you have large fingers.

The second model I tried, the powerful Construction Master III, works in metric and English units of measure. Other functions handle common calculations found in the building industry such as figuring out rafters, stairs, building-material needs, and volumes in cubic feet for a variety of geometric shapes. A user-friendly, example-filled guide book walks you through calculations.

Like the Tape Mate, this calculator comes with a one-year warranty, but costs $84.90. Yet, for the commercial woodworker and builder, this investment would pay for itself quickly in time savings. I like the larger size of its keyboard buttons and folding vinyl case. It comes standard with a required battery.

Tested by Jim Harrold

- *Tape Mate, $29 ppd. from Digi-Tool, P.O. Box 12350, Aspen, CO 81612. Call 800/543-8930 or 303/925-8177. The manufacturer also sells a larger calculator with additional abilities for $44 ppd.*

- *Construction Master III, $84.90 ppd. from Calculated Industries, 22720 Savi Ranch Parkway, Yorba Linda, CA 92687. Call 800/854-8075 or 714/921-1800. The manufacturer sells a wide variety of calculators in prices ranging from $39.95 to $129.95 plus shipping.*

To help you make smart buying decisions, *WOOD*® magazine's crack team of tool testers evaluate literally hundreds of woodworking products every year. Out of those many items, a few stand out because of their innovative technology or exceptional value. Some solve certain workshop problems so well that we have to tell you about them. We'll bet you find several products among these selections that will put you in a buying mood.

THE GUIDE TO PUBLISHED WOODWORKING PLANS & TECHNIQUES
By ART GUMBUS
Listing and Categorizing Over 4,000 Published Woodworking Articles From 8 Major American & Canadian Woodworking Magazines
Indexing Projects, Plans, Techniques and Tools in An Easy-to-Use Format!

Index makes it easy to find any article

WOOD® magazine reader Art Gumbus subscribes to many craft and building magazines. But, like so many of us, this well-read handyman had one small problem. When he needed to locate an article that he remembered from a previous issue, finding it was usually a time-consuming experience. So, like any enterprising do-it-yourselfer, he did something about it.

I recently reviewed his publication, *The Guide to Published Woodworking Plans & Techniques*, an index to 25 woodworking and do-it-yourself magazines from the U.S., Canada, and England. The product consists of a sturdy, three-ring binder filled with 240 pages printed on heavy-duty 80-pound paper. The pages lie flat and read easily because of the 10-point type. The index is divided into 35 major categories. A section in the rear of the compilation gives you information on ordering back issues from various publishers.

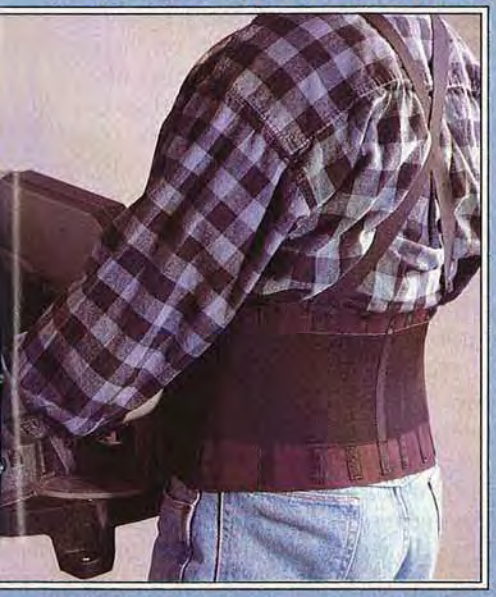
After becoming acquainted with the major categories, I was able to quickly find the source of the article(s) I needed. The book should withstand years of use, even if you regularly take it into the shop.

The publication costs $24.95, and I'm inclined to believe Gumbus when he told me he developed the index more for his passion of woodworking than profit. He also supplies a yearly update of completely new pages to registered owners for $15. In the near future he plans to make available a computer-disk version.

Tested by Bill Krier

• *The Guide to Published Woodworking Plans & Techniques, $24.95 ppd. from KnotWhole Publishers, 5629 Main St.-Putney, Stratford, CT 06497.*

Back saver to the rescue



There's no getting around it. If you work with wood, you've probably experienced back pain at some time. Our craft often requires us to lift or push heavy objects, stand on our feet for long periods, or bend at the waist.

Both Lee Gatzke and I have had low-back problems for years, so we decided to give the BacBelt a try. We've worn the belts around our shops, and have found that the firm, yet comfortable, support provided by the belts helps lessen back fatigue.

This product consists of heavy elastic bands that you secure around your waist with hook-and-loop fastening material. Internal metal stays provide extra lower-back support, and adjustable suspenders fit over your shoulders.

The BacBelt comes in five waist sizes: 22–28″, 28–32″, 32–38″, 38–47″, and 46–56″. We found the belts quick and easy to slip on (over our shirts) and adjust.

Although this belt will lessen back fatigue, it won't make you invincible. You still need to use common sense, avoid lifting overly heavy objects, and give your back plenty of rest.

Tested by Jim Boelling and Lee Gatzke

BacBelt, about $36 at dealers across the country. Custom LeatherCraft, 811 58th St., Los Angeles, CA 90037.

First-class comfort in respiratory and face protection

It's the nature of woodworking—nearly all processes involving power tools generate airborne dust particles. This dust poses a health hazard for all woodworkers, particularly those of us allergic to certain types of wood or mold. To combat the problem, you can wear various dust masks and respirators, but I've always found these uncomfortable, especially in warm conditions. And if you have a beard, dust masks and respirators won't seal tightly around your face.

Recently, I tried an air-filtering device that's comfortable and effective, even on the hottest of days, and works fine for bearded users. The Airlite Air Visor from Racal Health & Safety has a fan, motor, filter, and rechargeable battery housed above the visor. During use a steady stream of filtered air flows over your face and out small holes at the bottom of the visor. (The filter removes dust particles, but does not screen out fumes and vapors.) The entire unit weighs only 1¼ pounds.

In my tests the Airlite Air Visor formed a tight, but comfortable seal around my face. And, I experienced an unexpected benefit. The stream of air kept my face cool and perspiration-free on a day when the temperature in my shop hovered above 80°.

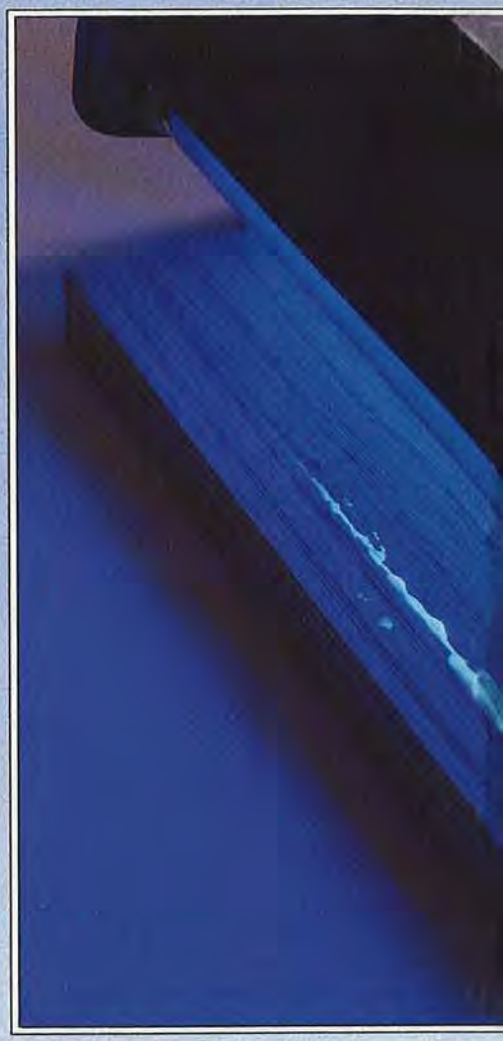
The motor makes a whiney noise that I found objectionable only when I had no machinery running. The impact-resistant, polycarbonate visor provided me with good vision, but it does not flip out of the way. (The manufacturer supplies units with flip-up visors, but at a greater cost.)

The basic unit ($229) comes with a 4-hour battery that in my tests delivered all of its advertised run time and then some. For $30 more, you can buy an 8-hour battery that clips to your belt. This reduces the weight of the helmet to 1 pound, and adds the 1-pound clip and connecting wire. If you feel you need more than four hours of running time, consider buying a second 4-hour battery for $36.

Replacement filters cost $33.75 for a 3-pack. The supplier told me the filters should last 50–75 hours each if you blow them out after each use.

Tested by Chuck Hedlund

Airlite Air Visor by Racal Health and Safety, $229 ppd. from Airstream Dust Helmets, P.O. Box 975, Elbow Lake, MN 56531. Call 800/328-1792.



A glowing way to detect glue squeeze-out

Glue blotches around the joints of your woodworking projects can really drive you nuts if you detect them *after* you apply the finish. Unfortunately, you can't spot the stuff until you apply an oil, stain, or other finish. That is, until now. Today, you can buy Spotlight, a concentrated glue additive that makes woodworkers' glue glow under the rays of an ultraviolet (UV) fluorescent tube, commonly called a black light. You add the liquid concentrate to yellow or white woodworkers' glue at the rate of ⅔ ounce per quart of glue.

The additive does not change the appearance of the glue, but even the tiniest traces of it shine brightly under the UV light. The glue will glow whether it's wet or dry, so you can check for excess glue at any stage in the completion of your project.

In my tests the product worked perfectly. By passing the ultraviolet light over some projects prior to applying a finish, I detected excess glue where I never would have suspected finding it. Also, I did not notice any difference in the drying time or bonding power of the glue. Since the product has an indefinite shelf life, I suggest you save money by buying it in larger quantities.

Tested by Bob McFarlin

Spotlight, $3 for ⅓ oz. (enough for 1 pint of glue), $4.50 for ⅔ oz., and $6 for 2⅔ oz. (enough for 1 gallon of glue). An 18" ultraviolet fluorescent fixture with tube sells for $27. Add $8 shipping for light and glue, or $4 shipping for glue only. Allow 4–6 weeks for delivery. Spotlight, P.O. Box 97, Carlisle, PA 17013.

Laser shows where your miter cut will fall

Lasers have been used in industrial and construction applications for years. So, it seemed like only a matter of time before these concentrated beams of light would be built into woodworking tools affordable to the general public. That time has come.

The Porter-Cable model 7700 10" mitersaw has a built-in laser that shows where the kerf will be in your workpiece. By pressing a slide-through button at the front of the blade housing, you can position the .035"-wide light beam to the left or right of the kerf.

After carefully adjusting the laser beam, my degree of error was about 1/64"—good enough for most carpentry tasks. For precision woodworking tasks, such as mitering picture frames, you'll need to cut the workpiece slightly long and trim it to exact length without relying on the laser. I found the laser equally accurate for crosscuts and miters. After several months of use, the laser has remained in proper adjustment.

The laser stays on continually with the saw plugged in, and provides a visual warning of where the blade will cut. Dennis Huntsman of Porter-Cable told me the laser should last 60,000 hours—nearly seven years if you leave the saw plugged in day and night.

Beyond the laser light, the rest of the saw compares favorably with the best 10" angle-only mitersaws on the market. Because of belt-drive, the saw runs quietly with smooth starts and quick, but not jerking, stops. It has a comfortable, horizontal, D-shaped handle, and changing blades proved easy. In terms of capacity, the saw will handle a 2×6 at 90° and a 4×4 at 45°. It comes with a good-quality, 40-tooth, carbide-tipped blade.

Tested by Bob McFarlin

Porter-Cable model 7700 mitersaw, under $400 through mail-order sources. Porter-Cable, P.O. Box 2468, Jackson, TN, 38302-2468. Call 901/668-8600.

E-Z Hold Steel Bar Clamp Adaptor

E-Z Hold Steel Bar Clamp

Dust collection: A complete and simple solution

A lot of us would like to control sawdust in our shops, but we don't want to spend lots of money on a dust collector, or hassle with installing a complicated collection system. Now, Sears has a reasonably priced dust-collection system that works with shop vacuums.

The Whole Shop Sawdust Collection Kit consists of eight 3′ sections of 2″-diameter clear-plastic pipe, two 90° elbows, three 45° elbows, five couplers, four wye fittings, and six blast gates. By hooking up these components to your shop vacuum, you can draw sawdust from up to five machines (one at a time).

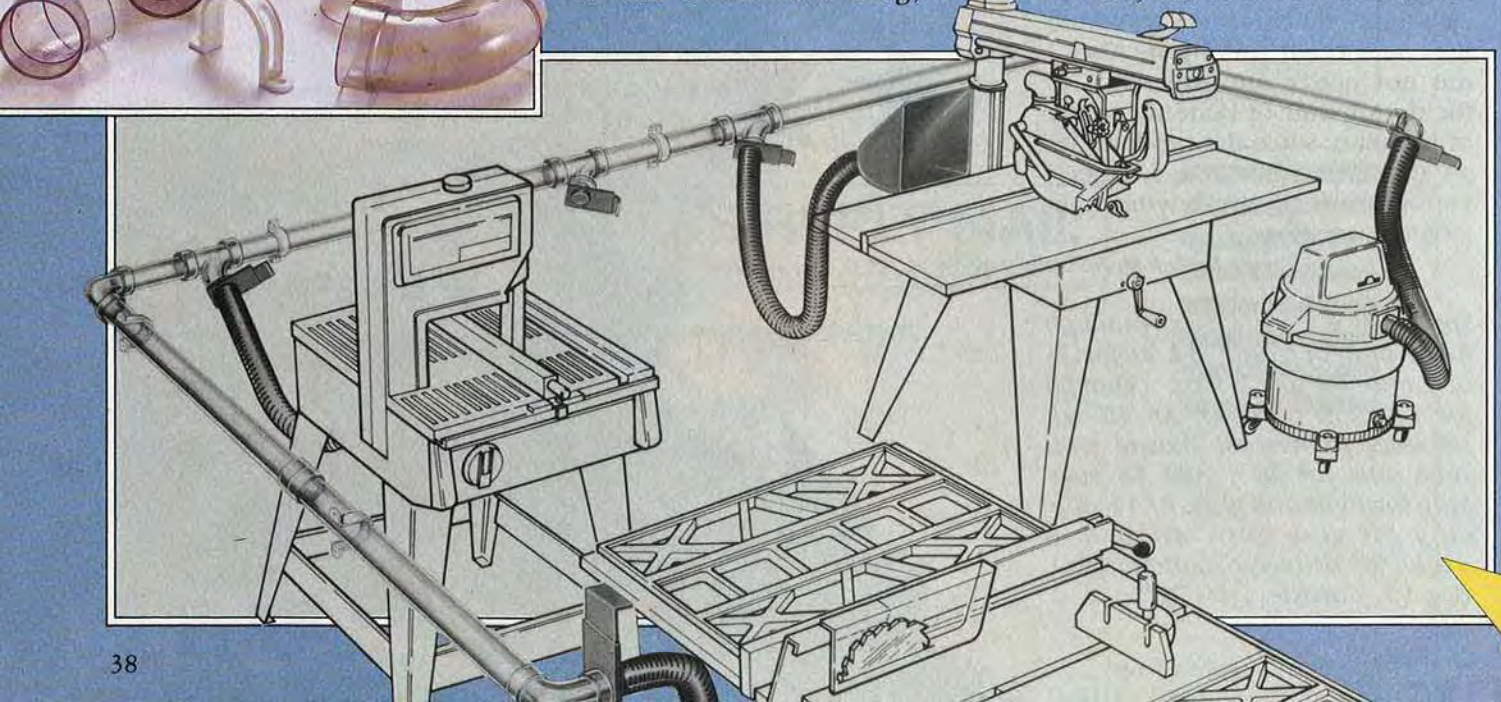
I purchased two kits for a system with about 50′ of pipe run. On one end of the installation, I hooked up my 2-hp Sears shop vacuum and routed the piping to these tools: a 10″ radial-arm saw, 6×48″ stationary belt sander, 14″ bandsaw, and 12″ planer. The system works like a charm. There's plenty of suction at each gate, and I haven't experienced any clogs. In the event of a clog, I would have located it quickly because of the clear tubing.

With a price of $80 per kit, I think you'll find it difficult to assemble such a system with PVC pipe for less money. And, the blast gates are sturdier and more airtight than any other plastic ones I've seen.

The instructions indicate that you don't need to fasten the components together. I tried the system this way, and it works fine, but I fastened the joints with plastic tape to hold everything together better. To hold down on the noise made by my shop vacuum, I enclosed it in a closet.

Tested by Bob McFarlin

Sears Whole Shop Dust Collection Kit, $80 at stores nationwide.



Bar-clamp adaptor makes for one-handed clamping

I've been a big fan of clamps that you can position and operate with one hand ever since American Tool Companies introduced the Quick-Grip Bar Clamp several years ago. Now, Adjustable Clamp Company, makers of Jorgensen clamps, have one-handers called E-Z Hold Steel Bar Clamps.

These clamps are exactly like the traditional line of Jorgensen bar clamps, except these versions have the E-Z Hold mechanism added to the moveable jaw. To operate the clamp, you rest the steel bar in your palm and squeeze the E-Z Hold handle to advance the jaw. By doing this you can snug the clamp into position quickly. Then, you grasp the screw handle and give it a twist for extra clamping pressure.

Since I already have a considerable number of the traditional bar clamps, I was pleased to hear that I could buy an E-Z Hold Adaptor Kit for about $6. It took me less than a minute to convert an old clamp into an E-Z Hold clamp.

Tested by Jim Boelling

Jorgenson Style 3600 E-Z Hold Steel Bar Clamps, $13.25–$24.50 each for models with maximum openings ranging from 6" to 36". Adaptor kits sell for $5.90. Call Tools on Sale at 800/328-0457 or 612/224-4859.

Grid film stars in pattern transfer

No matter what type of woodworking you do, this new product will simplify the task of transferring patterns. Draw & Saw is a translucent plastic film with an adhesive backing. It has heavy grid lines spaced 1" apart, with thinner grid lines ½" apart, and tick marks every ¼" along the grid lines. Like contact paper, Draw & Saw comes in 12"-wide rolls, and has a clear, easily removable film covering the adhesive-backed side.

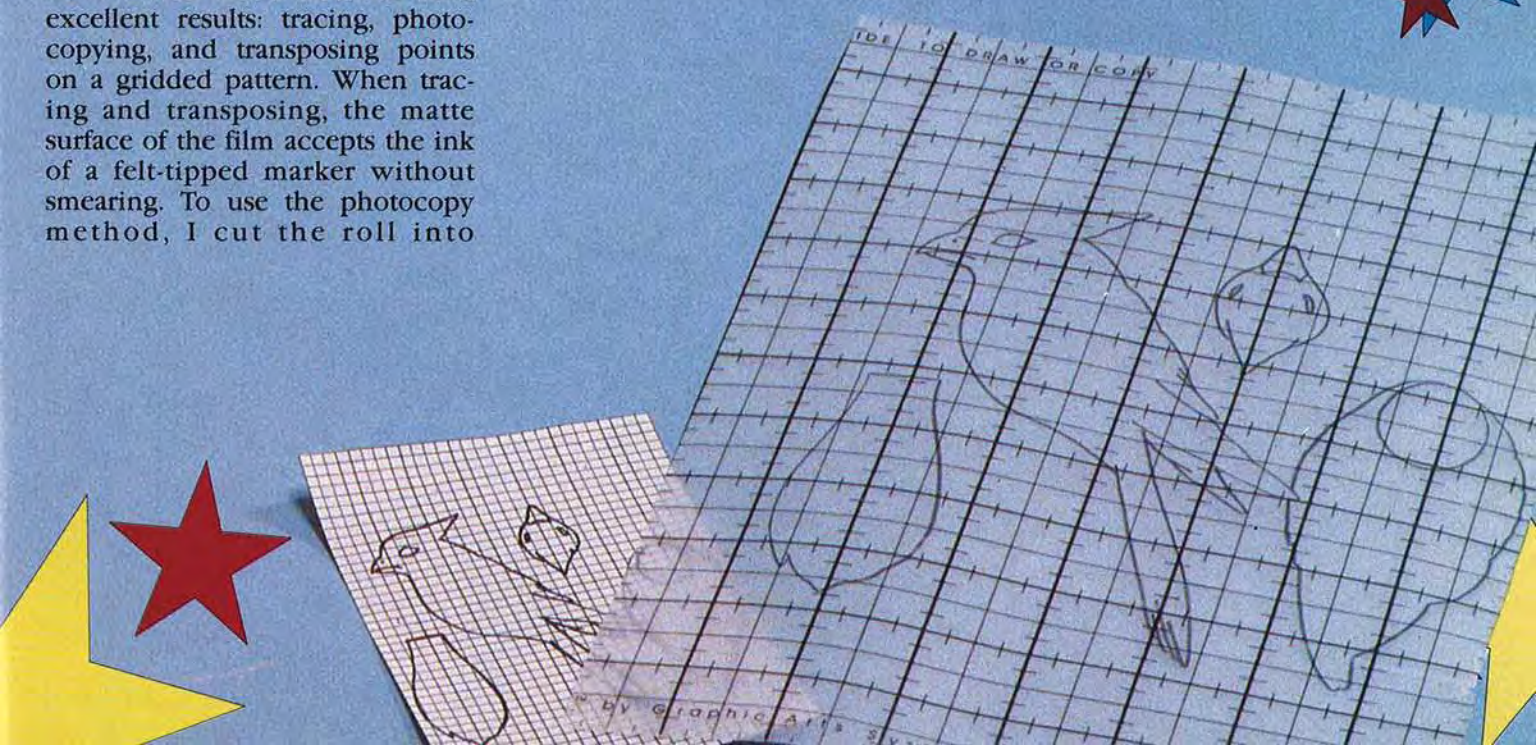
Here's how it works. First, you transfer the pattern to Draw & Saw. I tried three methods with excellent results: tracing, photocopying, and transposing points on a gridded pattern. When tracing and transposing, the matte surface of the film accepts the ink of a felt-tipped marker without smearing. To use the photocopy method, I cut the roll into 8½ × 11" sheets and ran them through a plain-paper copier.

Next, I removed the adhesive covering and applied the pattern to my stock. Because you can see through the film, I positioned the pattern to best take advantage of grain patterns. The film adhered well and did not lift during bandsaw and scrollsaw cuts. It came off with little effort, and left no residue on the wood, even after sitting on the stock for a day.

I would like to see the manufacturer make the 1" grid lines a little thinner. Because they're about 1/32" thick, they could interfere with finely detailed patterns. For these intricate patterns, I suggest you buy the nongridded version of the product.

Tested by Kim Downing

Draw & Saw, $15.95 for a 15' roll, $29.95 for 30', and $44.95 for 50', with or without grids. Add $2.50 shipping per roll. From Graphic Arts Systems, 19499 Miles Road, Cleveland, OH 44128. Call 216/581-9050.



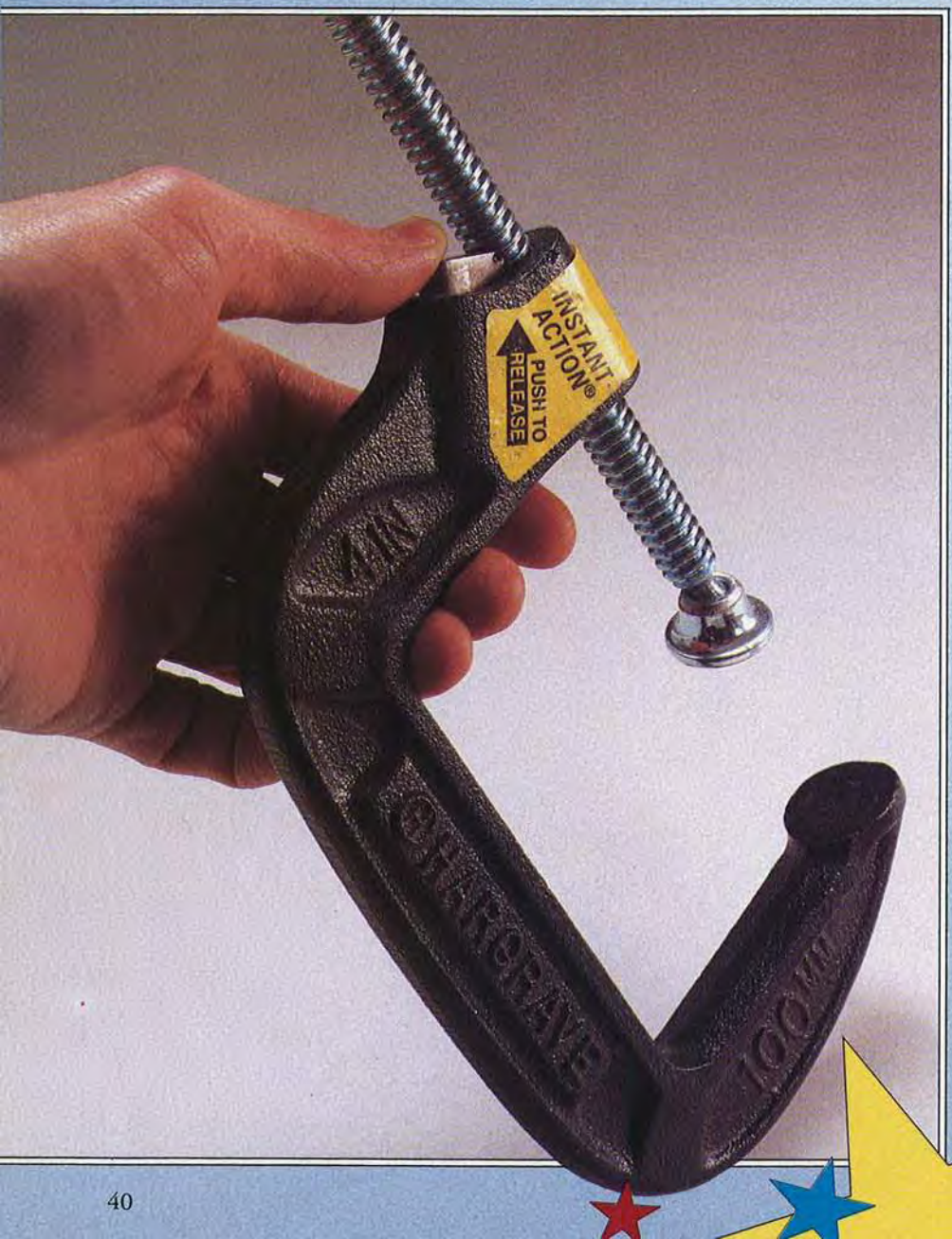
Quick-release C-clamp speeds you along

C-clamps work great when you need a compact clamp that exerts lots of pressure. But, I usually avoid using the C-clamps in my shop because it takes time and effort to turn the screw to the correct jaw depth. The new Hargrave Quick-Release C-clamp changes all of this.

These C-clamps have a button near the screw that you depress to disengage the screw as shown in the photo *below*. This way, the screw slides up and down effortlessly. When you let go of the button, the clamp performs like any other C-clamp. The solidly built model worked without a hitch in my tests.

Tested by Chuck Hedlund

Hargrave Quick-Release C-clamp, about $15 for the model with a 4" opening; about $17 for the 6" version. Available at distributors nationwide, and through some specialized catalogs. For more information, including the location of your nearest dealer, contact: Warren Tool Group, P.O. Box 286, Garretsville, OH 44231. Call 800/543-3224.



A top contender for king of the mitersaws

If you're looking for a mitersaw with lots of cutting capacity, accuracy, and portability, then consider the DeWalt DW705. I recently gave this saw a thorough test, and came away impressed.

This compound mitersaw has a 12" blade, so it will crosscut a 4×6 or a 2×8, miter a 4×4 at 45°, and tackle 6⅝" crown moldings or 7⅞" base moldings. And, it has a miter scale that's the best I've seen in its class. The stainless-steel scale features large, easy-to-read markings, and nine positive stops. Like some high-quality aftermarket rip fences, this saw has a hairline cursor for on-the-money settings. The cursor even has a vernier scale that allows you to set it for partial degrees.

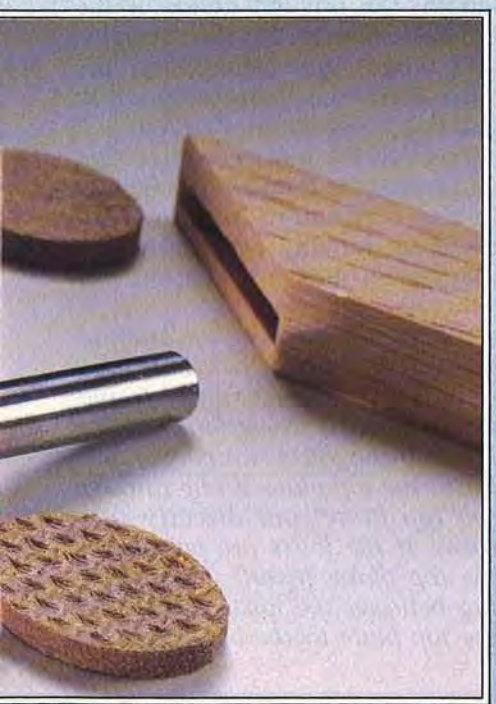
Some other things I like about this saw include its light weight (38 pounds) and top-mounted carrying handle, a beefy knuckle with no play (the knuckle controls the tilt of the blade/motor assembly), a horizontal, D-shaped handle that's comfortable, and a 5"-high left-side fence with a portion that slides left for bevel cuts.

Of course, no tool is perfect, and even this mitersaw has room for improvement. Like most other mitersaws that have helical-gear drive instead of belt drive, the DW705 makes plenty of noise. And, I found it a time-consuming hassle to change blades—it seemed like I needed three hands to do the job efficiently.

The 32-tooth, thin-kerf, carbide-tipped blade that comes with the machine has too few teeth for smooth cuts. I ordered a similar 80-tooth blade from DeWalt, and although this was better, I could still see light through my miter joints. My results improved dramatically when I added a blade stabilizer alongside the blade, telling me that this machine requires a full-bodied blade for furniture-quality cuts. Buying a quality 12" blade with 80 or 96 teeth will add more than $100 to your investment.

Tested by Bob McFarlin

DeWalt DW705 12" compound mitersaw, less than $400 through mail-order sources. For more information call DeWalt at 800/433-9258.



New biscuit system works with 1⅛"-wide stock

Whenever possible, I prefer to join my projects with compressed-wood biscuits. These football-shaped wafers help me produce strong and accurate joints with less time and effort than with dowels.

Standard biscuits have one drawback, however. The smallest size, no. 0, measures 1 13/16" long, so you would be hard pressed to join a piece less than 2⅜" wide with such a biscuit. Woodworker Brad Witt recognized this shortcoming several years ago and came out with a system that uses 1¼"-long biscuits. Now, he's done himself one better by coming out with Itty Bitty Biscuits & Bits.

This system centers around a 13/16"-long biscuit, and a router bit that cuts a 15/16"-long slot for it. Now, you can butt-join pieces as narrow as 1⅛", and 45°-mitered workpieces as narrow as ⅞".

In my tests the system worked perfectly. The biscuits fit nicely into the slots cut by the provided bit. As with any compressed-wood biscuits, you must be careful to store these in an air-tight plastic bag. Otherwise, they may absorb moisture and swell up.

Tested by Chuck Hedlund

Itty Bitty Biscuits & Bits, $27.99 for starter kit with slotting bit and 100 biscuits. Add $5 shipping for orders up to $75. Shipping free on orders over $75. Larger quantities of biscuits available. Woodhaven, 5323 W. Kimberly, Davenport, IA 52806. 800/344-6657 or 319/391-2386.

Print this article

SPACE-SAVIN', WALL-HUGGIN' LUMBER STORAGE RACK

Looking for versatility in a lumber storage rack? This one's got it! Our rack features adjustable supports that attach to vertical 2×4s for holding loads of boards. The unique sheet-goods bin lets you easily sort through heavy sheets and slide out the one you want. There's even between-the-studs storage for short stock and dowels.

Let's start with the wall framework

Note: *We built our rack to fit against an existing drywalled wall. If you have an exposed stud wall and would like to use it, skip this section and build only the storage rack components covered in the later sections.*

1 Measure the distance between your floor and ceiling. The overall height of the rack should be ¼" less than the measured distance.

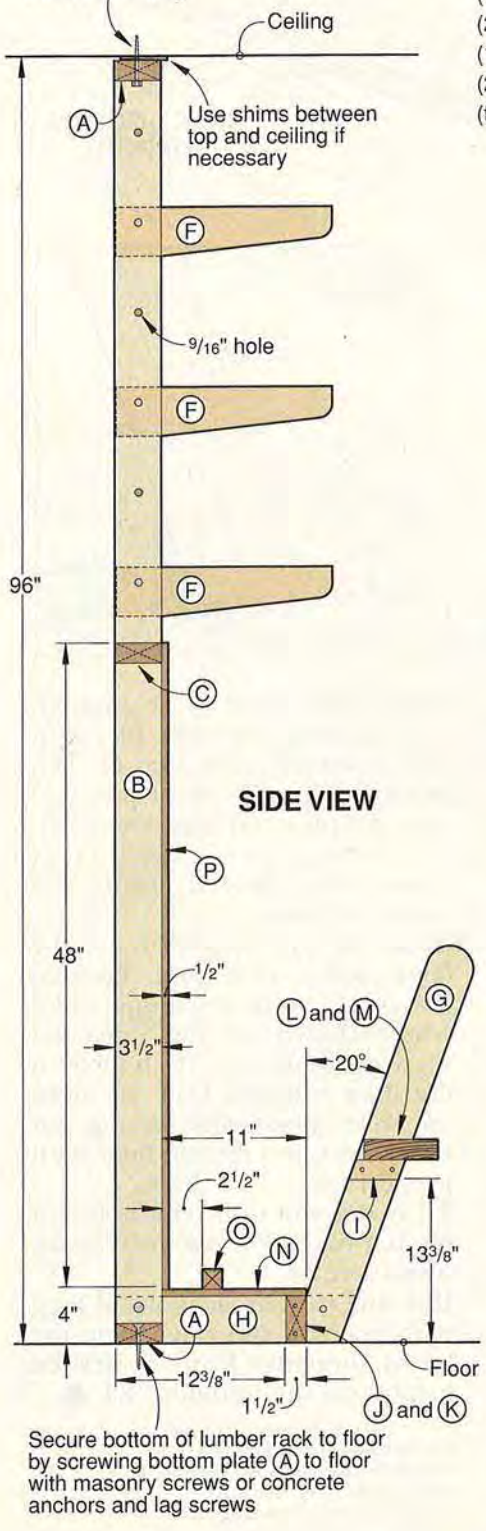
2 From 2×4 stock, crosscut the top and bottom plates (A), uprights (B), and spacers (C) to length. Lay out the holes for the board supports on the uprights (B) where dimensioned on the Wall Framework drawing. Bore the 9/16" holes where marked.

3 Position the pieces on the floor, and screw the framework together in the configuration shown on the Wall drawing. Square the uprights with the bottom plate.

Caution: *Considering the amount of weight this unit can hold, you must securely anchor the framework to wall studs and ceiling joists. If the joists run perpendicular to the top plate, screw through the top plate and directly into them. If the joists are parallel to the top plate, install 2×4 blocking between the joists, and screw the top plate to the blocking.*

Continued

Fasten top of lumber rack to ceiling by screwing top plate Ⓑ into ceiling with 1/4" lag screws 3 1/2" long

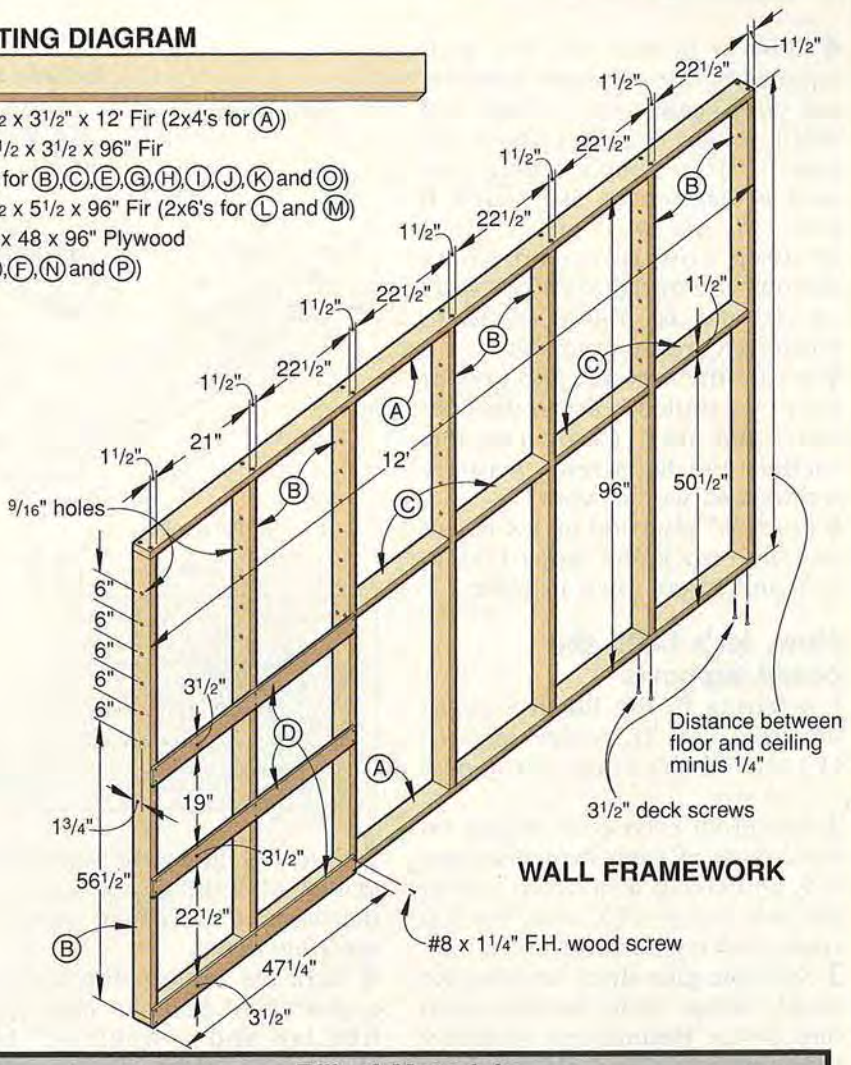


SIDE VIEW

Secure bottom of lumber rack to floor by screwing bottom plate Ⓐ to floor with masonry screws or concrete anchors and lag screws

CUTTING DIAGRAM

(2) 1 1/2 x 3 1/2" x 12' Fir (2x4's for Ⓐ)
(17) 1 1/2 x 3 1/2 x 96" Fir (2x4's for Ⓑ,Ⓒ,Ⓔ,Ⓖ,Ⓗ,Ⓘ,Ⓙ,Ⓚ and Ⓞ)
(1) 1 1/2 x 5 1/2 x 96" Fir (2x6's for Ⓛ and Ⓜ)
(2) 1/2 x 48 x 96" Plywood (for Ⓓ,Ⓕ,Ⓝ and Ⓟ)



WALL FRAMEWORK

Bill of Materials

Parts	Finished Size T	W	L	Matl.	Qty.
WALL FRAMEWORK					
A top & btm plates	1½"	3½"	12'	C	2
B* uprights	1½"	3½"	93"	C	7
C spacers	1½"	3½"	22½"	C	4
D stops	½"	3½"	47¼"	PLY	3
BOARD SUPPORTS					
E center	1½"	3½"	12"	C	21
F sides	½"	3½"	15½"	PLY	42

Parts	Finished Size T	W	L	Matl.	Qty.
SHEET-GOODS BIN					
G angled supports	1½"	3½"	32"	C	5
H floor supports	1½"	3½"	18"	C	5
I cleats	¾"	1½"	4¼"	C	8
J spacers	1½"	3½"	22½"	C	3
K spacer	1½"	3½"	19½"	C	1
L steps	1½"	5½"	22½"	C	3
M step	1½"	5½"	19½"	C	1
N floor	½"	11"	94½"	PLY	1
O cleat	1½"	1½"	94½"	C	1
P back	½"	48"	96"	PLY	1

Supplies: 3½" deck screws, #8×1¼" flathead wood screws, #8×1½" flathead wood screws, #8×2½" flathead wood screws, #8×3" flathead wood screws, ¼" lag screws 3½" long with flat washers, ½" carriage bolts 2" long with flat washers and nuts, ½" carriage bolts 3" long with flat washers and nuts, ½" carriage bolts 3½" long with flat washers and nuts, paraffin wax, masonry screws.

*Length will depend on distance from floor to ceiling at chosen rack location.

Materials Key: C-choice (fir, pine, spruce), PLY–plywood.

4 With a helper, lift the wall framework into position. Shim the top plate against the ceiling, and firmly secure the top plate to the joists in your shop's ceiling (we used ¼" lag screws 3½" long). If you can hit wall studs, drill 2"-deep counterbored holes through the uprights (B) or spacers (C) and use 3"-long screws to further secure the framework.

5 Secure the bottom plate to your floor (we drilled holes in the concrete, and used plastic concrete anchors and lag screws; masonry screws also would work).

6 From ¾" plywood or 1×4s, cut the short-stock bin stops (D) to size, and screw them in place.

Now, let's build the board supports

1 Referring to the Board Support drawing, cut 21 center sections (E) and 42 plywood side pieces (F) to size.

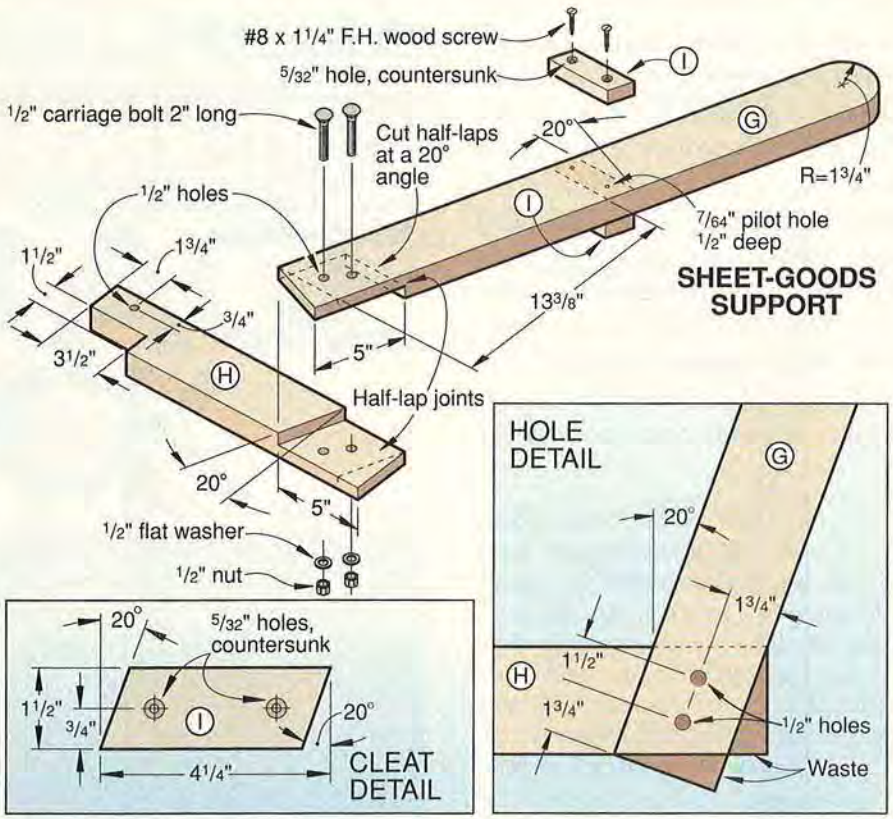
2 Spread an even coat of glue on both faces of each center section (E), and clamp it between two of the side pieces (F), with the top edges and outside end flush.

3 After the glue dries, transfer the profile of one of the supports onto one of the laminations. Bandsaw the support to shape, and sand the cut edges smooth to remove the saw marks. Then, use this as a template to mark the profile onto the rest of the supports. Cut and sand them to shape.

The sheet-goods bin comes next

1 Using the Sheet-Goods Support drawing and accompanying details, cut the angled supports (G), floor supports (H), and cleats (I) to size. Cut 20° half-lap joints in the H and I pieces where shown on the drawing. Referring to the Cleat detail, miter the ends of the step cleats (I) at 20°.

2 Cut a 1½×3½" notch in the back of each floor support (H) where shown on the drawing.



3 Glue and clamp the supports together. After the glue dries, cut off the waste areas, where shown on the Hole detail.

4 Mark the centerpoints and drill a pair of ½" holes in each glued half lap and a single ½" hole above each notch. To strengthen the joints, add a pair of carriage bolts with flat washers and nuts to each half-lap joint.

5 Drill the mounting holes, and glue and screw the stop cleats to the angled supports (G).

6 Clamp the support assemblies (G, H, I) to the uprights (B) where shown on the Sheet-Goods Bin Exploded View drawing and accompanying Support detail. Using the previously drilled holes above the notches in H as guides, drill the holes through the uprights. Install carriage bolts to secure the support assemblies to the 2×4 uprights.

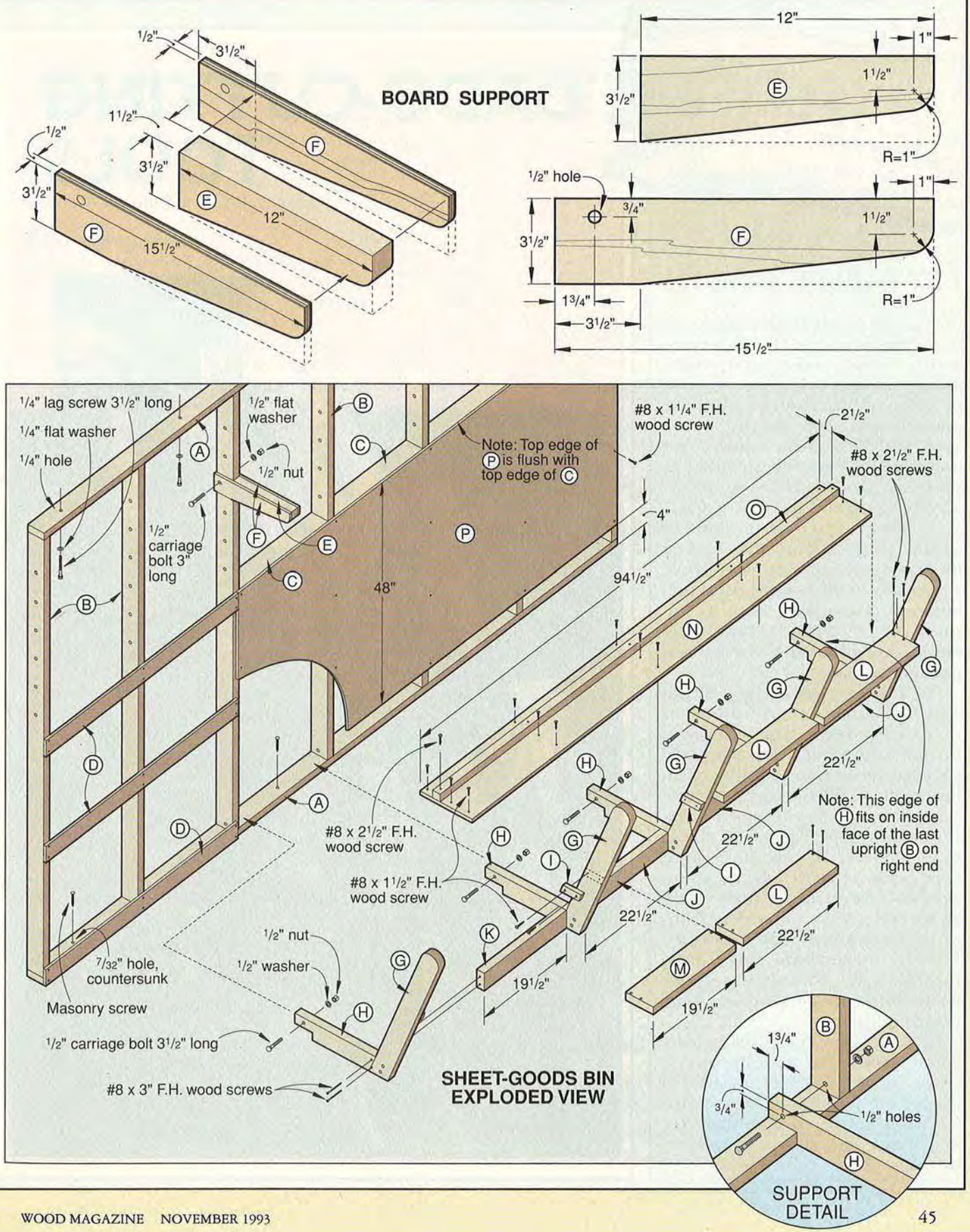
7 From 2×4 and 2×6 stock, cut the floor spacers (J, K) and steps (L, M) to length. Drill mounting holes (some need to be angled), and glue and screw the pieces in place. Position each step (L, M), so the back edge won't protrude into the plywood bin and possibly damage any stored sheet goods when pressed against the angled supports.

8 Cut the bin floor (N) and the floor cleat (O) to size. Position the pieces, drill mounting holes where shown on the Exploded View drawing, and attach them to the floor supports (H). To make the sheet goods slide in and out even easier, rub the bin floor with paraffin wax.

9 Lay out and drill pilot holes on the bin back (P), and attach with wood screws.

10 Using ½" carriage bolts 3" long with washers and nuts, hang the board supports (E, F) at desired heights on the uprights (B).

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: Wm. Hopkins
Illustrations: Kim Downing


BOARD SUPPORT
1/2"
3 1/2"
1 1/2"
3 1/2"
1/2"
3 1/2"
F
E
12"
F
15 1/2"
12"
1"
1 1/2"
3 1/2"
E
R=1"
1/2" hole
1"
3/4"
1 1/2"
3 1/2"
F
1 3/4"
3 1/2"
R=1"
15 1/2"
1/4" lag screw 3 1/2" long
1/4" flat washer
1/4" hole
1/2" flat washer
1/2" nut
1/2" carriage bolt 3" long
Note: Top edge of P is flush with top edge of C
#8 x 1 1/4" F.H. wood screw
2 1/2"
#8 x 2 1/2" F.H. wood screws
4"
48"
94 1/2"
#8 x 2 1/2" F.H. wood screw
#8 x 1 1/2" F.H. wood screw
22 1/2"
22 1/2"
22 1/2"
22 1/2"
Note: This edge of H fits on inside face of the last upright B on right end
1/2" nut
1/2" washer
7/32" hole, countersunk
Masonry screw
1/2" carriage bolt 3 1/2" long
#8 x 3" F.H. wood screws
19 1/2"
19 1/2"
SHEET-GOODS BIN EXPLODED VIEW
1 3/4"
3/4"
1/2" holes
SUPPORT DETAIL

TOOL-BUYER'S

Help yourself to a corral full of great choices

LET'S TALK TOOLS

Just as any self-respecting cowboy needs a healthy horse, a sturdy saddle, and a strong rope, today's woodworker needs power tools and accessories built for performance and durability. To save you a trip into town, we corraled seven such groups so you can do your comparison shopping on the next 14 pages.

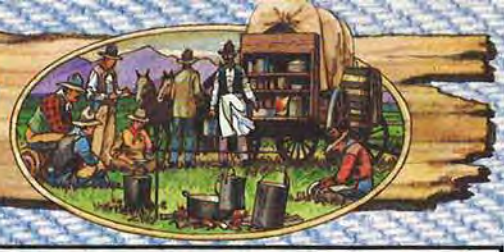
In case you're new to *WOOD*® magazine and unaware of our tool comparisons, on page 74 we summarize the results of previous tool tests dating back to August 1992. You'll find our recommendations for seven product groups.

We also can help you find the right product in a number of other categories. One year ago, in our November 1992 issue, we covered these power tools: cordless drills, drill presses, jointers, portable belt sanders, routers, scrollsaws, tablesaws, and thickness planers. If you don't have this issue, we still have some available. You need only send $5.95 ppd. ($6.95 for orders from outside the United States) to *WOOD*® Back-Issue Sales, P.O. Box 9266, Des Moines, IA 50306-9266. Remember to include your return address.

In case you have questions about a particular manufacturer's tools, such as where to find a dealer in your area, we've included a listing of manufacturer addresses and phone numbers on page 72.

DADO-CUTTING TOOLS

ROUNDUP



Nothing cuts a square channel through wood faster than a dado blade or set mounted in your tablesaw or radial-arm saw. With prices ranging from $25 to $270, you can imagine that these cutters contrast considerably in quality and performance.

Key buying points

- ***Stackable or adjustable.*** For the finest possible results, choose a stackable dado-blade set such as the model *left*. These sets consist of two, ⅛"-kerf, outside blades and four to six inside blades (called chippers) of varying widths.

  If you can live with rougher cuts, take a look at adjustable dado sets. These products have one or two blades affixed to a central hub. By turning the hub you angle the blades slightly for cutting dadoes of varying widths.

- ***Number of teeth.*** For the most part, blade sets with more teeth per blade or chipper produce smoother cuts. Each additional tooth also adds to the initial cost of the set, and to the cost of having the set resharpened.

- ***Shims.*** To finely adjust a stackable set for any width between ¼" and 13⁄16", you need to add thin metal, plastic, or paper shims between the blades and chippers. Note that some sets come standard with these shims. If purchased separately, shim sets cost $5–$10.

- ***Saw alignment.*** No matter how much money you spend on a dado set or blade, it won't cut worth a hoot if you don't have your saw properly aligned.

In our October 1991 test, these products earned best-value ratings:

- **Over $150:** Forrest Dado King; Woodworker's Supply 800-764.
- **$100–$150:** Freud SD308.
- **$50–$100:** Sears 32708.
- **Under $50:** Irwin 16120.

Since our last review, Freud has introduced the model SD508. We'll test this product as soon as possible.

30 DADO-CUTTING TOOLS THAT HELP YOU GET INTO THE GROOVE

	MANUFACTURER	MODEL	BLADE DIAMETER (INCHES)	CARBIDE-TIPPED	TEETH PER CHIPPER	TEETH PER OUTSIDE BLADE	SHIMS INCLUDED	WEIGHT (IN OUNCES, WITH ALL CHIPPERS)	COUNTRY OF ASSEMBLY (1)	LIST PRICE	SELLING PRICE (2)
STACKABLE DADO SETS	AMANA	658030	8	YES	2	28	NO	73	IS	$ 180	$ 130
		658040	8	YES	2	50	NO	105	IS	275	200
	CMT	108-320	8	YES	2	36	NO	80	C	210	159
	DML	ID800	8	YES	2	26	NO	73	U	252	200
	DELTA	35-560	8	YES	2	28	NO	73	IS	270	150
		34-333	6	NO	2	42	YES	31	U	67	60
	FORREST	DADO KING	8	YES	4	36	YES	82	U	299	269
	FREUD	SD308	8	YES	2	28	NO	86	IT	230	115
		SD508	8	YES	4	36	YES	120	IT	325	N/A
	OLDHAM/US SAW	800-5818	8	YES	2	18	YES	68	U	199	129
		800-5220	8	NO	2	20	YES	73	U	47	34
	SEARS	32175	7	NO	2	112	YES	60	U	–	30
		32176	7	NO	2	112	YES	69	U	–	48
		32177	8	NO	2	112	YES	78	U	–	56
	SYSTIMATIC	SUPERFINE	8	YES	6	44	NO	139	U	378	249
		FINE	8	YES	2	28	NO	82	U	231	134
	VERMONT AMERICAN	26742	8	NO	2	56	YES	74	U	68	62
		26747	7	NO	2	112	YES	59	U	68	65
	WOODWORKER'S SUPPLY	800-764	8	YES	2	48	NO	81	C	289	200
ADJUSTABLE DADO BLADES	CREDO	13436 ENDURO	7	YES	–	8	–	26	U	39	32
		10223	7	YES	–	12	–	24	U	52	47
	DML	AD800	8	YES	–	24	–	40	U	128	85
	DELTA	35-825	7	YES	–	16	–	24	NZ	30	28
	IRWIN	16120	6½	YES	–	8	–	18	U	61	45
	OLDHAM/US SAW	700-5012	7	YES	–	16	–	32	U	39	25
	SEARS	32708 EXCALIBUR	8	YES	–	24	–	33	U	–	80
		3261	7	YES	–	24	–	26	U	–	45
		3262	7	YES	–	32	–	28	U	–	50
		3263	7	YES	–	16	–	24	U	–	40
	VERMONT AMERICAN	26752	7	YES	–	16	–	16	U	50	42

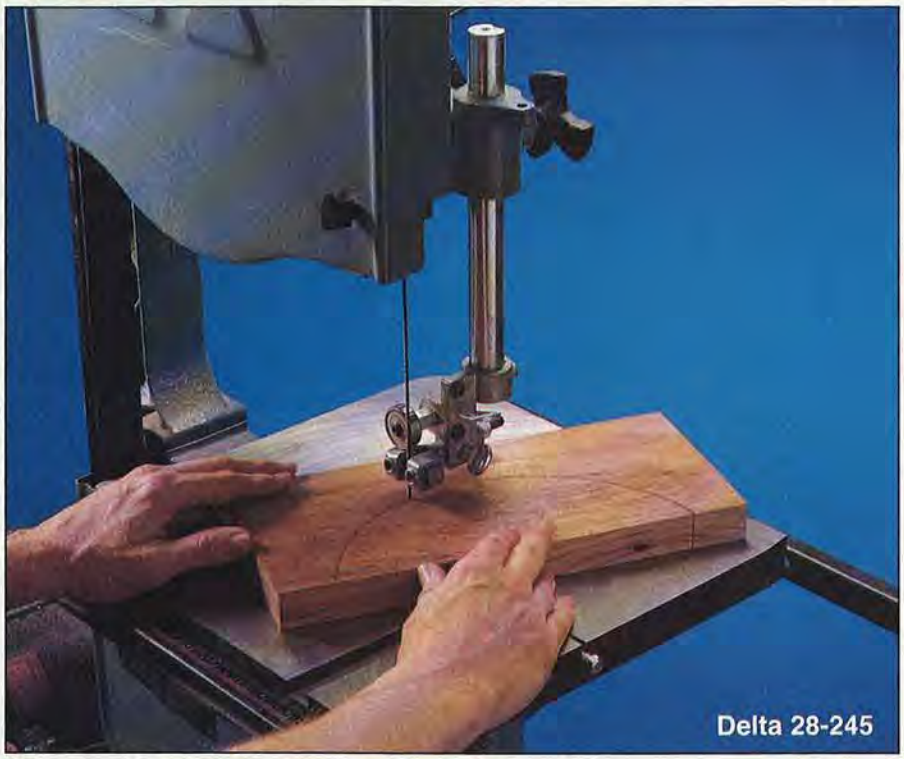
NOTES:

1. (C) Canada; (J) Japan; (IS) Israel; (IT) Italy; (NZ) New Zealand; (U) United States
2. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's production.

Illustration: Jim Stevenson Photographs: Hopkins Associates

BANDSAWS

Print this article



These do-it-all saws handle everything from fretwork to resawing thick lumber. They excel at cutting curved workpieces including free-form boxes, carving and turning blanks, and furniture parts such as table aprons and cabriole legs.

Key buying points

• ***Cutting capacity.*** In the chart *right* we list three key capacities to keep in mind when selecting a saw. The *throat* capacity refers to the distance between the blade and the saw frame, and tells you the widest cut possible with the machine.

Cutting height is the distance between the table and the upper blade guide, and determines the maximum thickness of wood you can cut. Note in the accessories column that some models have optional riser blocks that you can install in the saw frame to increase cutting height by about 6".

Blade widths for the bandsaws listed in the chart vary from 1/16" to 1½". Narrow blades cut in a tight radius, and will handle all but the most intricate scrollwork. Wide blades work best for resawing thick stock.

• ***Guide systems.*** Bandsaws have guide systems above and below the table to keep the blade running smoothly and perpendicular to the table. Look for guides that are sturdy, easy to reach, and quick to adjust. We prefer guides that have hand-operated, fine-adjustment knobs rather than bolts or setscrews.

• ***Two or three wheels.*** With the exception of the three-wheeled Delta 28-560, the bandsaws in the chart have two wheels. Three-wheel bandsaws have the advantage of giving you plenty of throat capacity for a low price, but you'll find a limited number of these machines. That's because they require more effort to adjust, and have a reputation for breaking blades. Three-wheelers force the blade to bend in a tight radius, causing greater metal fatigue than the larger-diameter wheels in two-wheel machines. We recommend you buy a two-wheel bandsaw.

• ***Quality of construction.*** You can find out a lot about the quality of a bandsaw by just turning it on and making a few adjustments. First, the machine should be relatively quiet and vibration free. Excessive vibration usually means that the wheels or other critical components are out of balance.

If a machine passes this test, check how smoothly the table tilts. Also, how easily can you reach and secure the knobs for locking the table and for adjusting blade tension? Can you open the cover and change blades with ease? Finally, grip the frame and check it for rigidity.

• ***The little extras.*** To help control cutting debris, better bandsaws have dust ports and small brushes that clear sawdust from the lower wheel. If you plan to use a fence or miter gauge with your bandsaw, note in the chart that only a few models come standard with these accessories.

The Delta 28-245 *above left* came out on top in our April 1992 review of bandsaws.

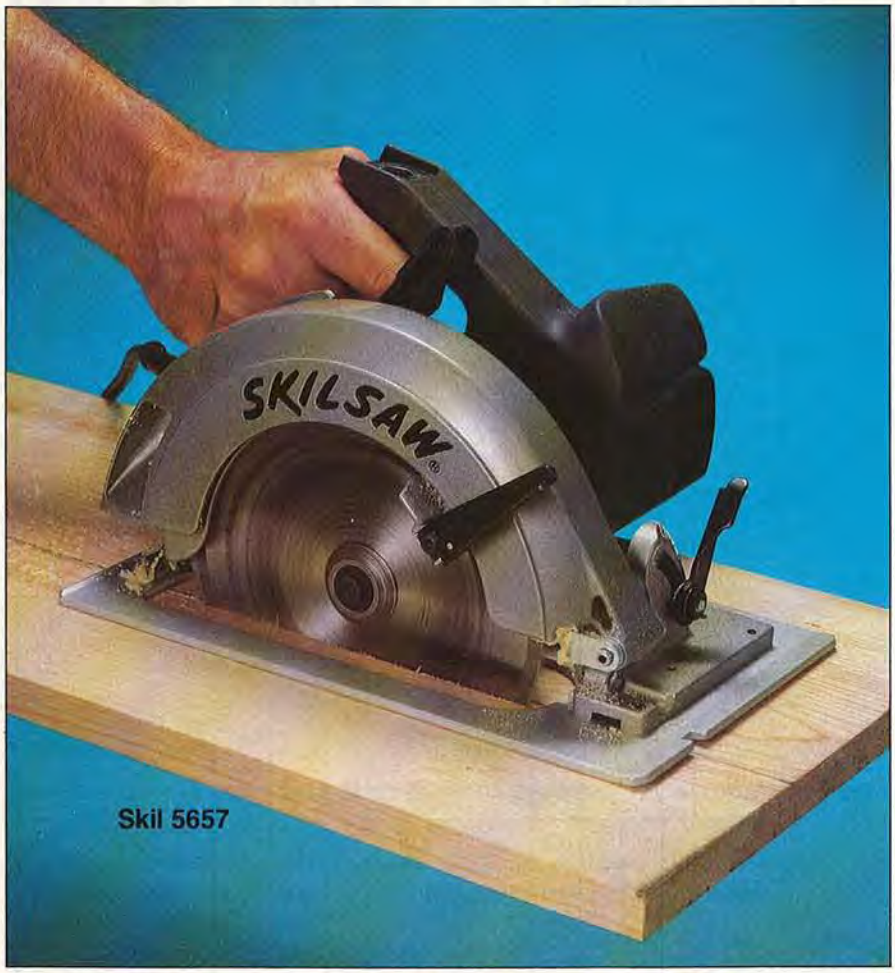
CURVACEOUS CUTTERS: 23 BANDSAWS

MANUFACTURER	MODEL	TYPE (1)	CAPACITIES (INCHES)				TABLE		POWER TRAIN			GUIDES			ACCESSORIES (8)		WEIGHT (POUNDS)	WARRANTY		COUNTRY OF ASSEMBLY (9)	LIST PRICE	SELLING PRICE (10)
			THROAT	CUTTING HEIGHT	BLADE WIDTHS	WHEEL MATERIAL (2)	SIZE (INCHES)	MATERIAL (3)	HORSEPOWER	BLADE SPEED (4)	DRIVE (5)	UPPER TYPE (6)	LOWER TYPE (6)	FRAME (7)	STANDARD	OPTIONAL		BANDSAW	MOTOR			
AMT	4113	S	13 3/4	6	1/8-3/4	CA	14x14	CI	1	3000	B	S	S	CI, 2	ST	F, MG, RB, TE	163	10 yrs.	1 yr.	T	$ 450	$ 376
BELSAW	MC-14BS-2	F	13 1/2	6	1/8-3/4	CA	14x14	CI	3/4	700, 1230, 2420	B	S	S	CI, 2	MG, ST	F, RB	205	1 yr.	90 days	T	579	495
DELTA	28-180	B	7 1/2	5	1/8-3/8	CA	11 3/8x11 3/8	CA	1/5	3600	D	S	S	CA, 1	MG	F, L, ST	35	2 yrs.	2 yrs.	T	211	170
	28-560	S	16	8	1/8-3/8	CA	16x16	CI	1/2	450, 2400	B	S	S	CI, 1	F, ST	L, SA	156	2 yrs.	2 yrs.	U	472	415
	28-283	S	13 3/4	6	1/8-3/4	CA	14x14	CI	3/4	3000	B	S	S	CI, 2	ST	F, L, MG, RB, SA	224	2 yrs.	2 yrs.	U	937	740
	28-245	S	13 3/4	6	1/8-3/4	CA	14x14	CI	1/2	3000	B	S	S	CI, 2	ST	F, L, MG, RB, SA	201	2 yrs.	2 yrs.	U	698	580
ENLON	ENBS14	S	13 1/2	5 3/4	1/8-3/4	CA	14x14	CI	3/4	2400	B	S	S	CI, 2	MG	RB, F	156	90 days	1 yr.	T	–	280
	ENBS16	S	15 1/2	10	1/4-1	CA	16x16	CI	1 1/2	1130, 1510, 2265	B	S	S	CI, 2	F, MG	–	225	90 days	1 yr.	T	–	490
	ENBS18	F	17 1/2	9 3/4	1/4-1 1/2	CA	18x18	CI	2	3300	B	S	S	S, 1	F, MB	–	350	90 days	1 yr.	T	–	880
GENERAL	490-1	S	15	6 3/4	1/8-3/4	CI	15x15	CI	1	3000	B	S	S	CI, 1	ST	F, L, MG	295	2 yrs.	1 yr.	C	989 w/o motor	1,050 with motor
GRIZZLY	G1019	S	14	6	1/16-3/4	CA	14 1/2x14 1/2	CI	3/4	2400	B	S	S	CI, 2	CC, F, MG, ST	–	185	3 mos.	1 yr.	T	–	295
	G1073	S	16	7 1/4	1/4-1	CI	17x17	CI	1 1/2	1825, 2300, 2650	B	S	S	CI, 1	F, MG, ST	–	350	3 mos.	1 yr.	T	–	550
	G1012	S	18	9 1/2	1/8-1 1/2	CA	18x18	CI	2	932, 1119, 1399	B	S	S	CI, 2	F, MG, ST	–	280	3 mos.	1 yr.	T	–	645
INCA	340	S/B	10 1/2	6 1/4	1/16-1/2	CA	12 1/2x12 1/2	AA	3/4	3281	D	C	C	CA, 1	F	CC, FM, MG, SA, ST, TE	70	5 yrs.	1 yr.	F	795	695
JET	WBS-140S	S	13 3/4	6	1/8-3/4	CA	14x14	CI	3/4	3000	B	C	C	CI, 2	ST	F, RB	180	2 yrs.	2 yrs.	T	549	430
	WBS-14CS	S	13 3/4	6	1/8-3/4	CA	14x14	CI	3/4	3000	B	C	C	CI, 2	MG, ST	F, RB	198	2 yrs.	2 yrs.	T	655	510
POWERMATIC	43	S	13 1/4	7 1/2	1/8-3/4	CA	15x15	CI	3/4	3000	B	B	B	S, 1	MG, ST	F, L	154	1 yr.	1 yr.	T	792	599
	141	S	14	6 1/2	1/8-3/4	CI	15x15	CI	1	3000	B	B	S	CI, 1	L, ST	CC, F, MG	225	1 yr.	1 yr.	U	1,557	1,400
SEARS	24450	B	10	3	1/8, 1/4	P	11 1/2x11 1/2	CA	1/5	2800	D	SS	SS	CA, 1	–	MG, ST	43	1 yr.	1 yr.	T	–	160
	24822	B	12	6	1/16-1/2	CA	23x18	CA	1/2	3000	B	S	S	CA, 2	L, SA, ST	CC, F, MG	126	1 yr.	1 yr.	U	–	300
	24832	S	12	6	1/16-1/2	CA	23x27	CA	5/8	1500, 3000	B	S	S	CA, 2	L, SA, ST	CC, F, MG	131	1 yr.	1 yr.	U	–	350
SHOPSMITH	555507 & 505992	S	11	6	1/8-5/8	CA	13 1/2x15	CA	1/2	2217, 3312	B	S	S	CA, 1	ST	CC, F, L, HG, TE	90	1 yr.	1 yr.	U	645	579
WOODTEK	811-709	F	18 1/2	12 1/2	3/8-1	CI	20 1/2x26 3/4	CI	2	N/A	B	S	S	S	F, MG	–	506	1 yr.	1 yr.	T	–	1,599

NOTES:

1. (B) Bench
   (F) Floor
   (S) Stand
2. (CA) Cast aluminum
   (CI) Cast iron
   (P) Plastic
3. (AA) Anodized aluminum
   (CA) Cast aluminum
   (CI) Cast iron
4. Feet per minute
   N/A Not Available
5. (B) Belt (D) Direct
6. (B) Ball bearings (S) Steel blocks
   (C) Cool blocks (SS) Stel screw
7. (CA) Cast aluminum (1) One-piece
   (CI) Cast iron (2) Two-piece
   (S) Steel
8. (CC) Circle-cutting kit
   (F) Fence
   (FM) Fence micro-adjuster
   (L) Lamp
   (MG) Miter gauge
   (RB) Riser block
   (SA) Sanding attachment
   (ST) Stand
   (TE) Table extensions
9. (C) Canada
   (F) France
   (I) Italy
   (T) Taiwan
   (U) United States
10. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's production.
    # Three models available

PORTABLE CIRCULAR SAWS



Skil 5657

Although not considered a precision-woodworking tool, a portable circular saw comes in mighty handy in any shop. No wonder only the electric drill surpasses this tool in ownership by *WOOD*® magazine readers.

Print this article

Key buying points

• ***Worm-drive vs. helical-gear models.*** When most of us think of a portable circular saw, we envision the widely available helical-gear version such as the one *above*. These machines have motors at a right angle to the blade. This construction makes them wider and shorter than worm-drive units, that have motors mounted in-line with the blade. These two types of saws get their names from the type of gear that transfers power from the motor armature to the blade arbor.

Worm-drive saws cost and weigh about 50 percent more than helical-gear saws, and have oil-filled gear casings that need occasional fill-ups. Nevertheless, these saws have certain advantages that make them favorites of some contractors.

First, worm-drive saws have greater torque than helical-gear saws, so they're less likely to bog down. And, because of their long and narrow design, worm-drive saws fit into tight spots and give you greater reach when cutting large panels.

• ***Size.*** By far the most popular size for portable circular saws is 7¼" (the largest blade that the machine will accept). A 7¼" machine makes good sense for most of us for several reasons. They will handle any cut through a 2×4, most people can manage their bulk and weight, and you'll find good variety and pricing in 7¼" saws and blades.

However, if you use a portable circular saw only for sheet goods and other material less than 1" thick, consider buying a model with a maximum blade size of 6½" or less. You'll find the smaller saws easier to control and less fatiguing to handle.

Note also in the chart *right* that you can purchase models with blades more than 10" in diameter. For the most part, contractors use saws with 10¼" blades for crosscutting 4x lumber in a single pass. Saws with blades greater than 16" in diameter help you cut landscape timbers down to size.

• ***Bearings.*** Some lower-priced portable circular saws have sleeve bearings supporting their armature or arbor. These suffice fine for occasional users, but will wear out in steady use.

• ***Arbor locks.*** More and more portable circular saws these days have arbor locks that hold the blade still while you loosen the blade's locking nut. This sure beats jamming the blade against a piece of wood as you work the blade wrench.

WORKSHOP WORKHORSES: 34 PORTABLE CIRCULAR SAWS

MANUFACTURER	MODEL	BLADE SIZE (DIAMETER IN INCHES)	MAXIMUM CUT DEPTH: BLADE AT 90°	MAXIMUM CUT DEPTH: BLADE AT 45°	FOOT TYPE (1)	AMPS	MOTOR/DRIVE ASSEMBLY: NO-LOAD SPEED (RPM) (2)	MOTOR/DRIVE ASSEMBLY: DRIVE (3)	MOTOR/DRIVE ASSEMBLY: BRAKE (4)	MOTOR/DRIVE ASSEMBLY: ARBOR LOCK (Y, N)	MOTOR/DRIVE ASSEMBLY: ARBOR SIZE (5)	SERVICEABLE EXTERNAL BRUSHES (Y, N)	SAFETY FEATURE: DOUBLE INSULATED (Y, N)	SAFETY FEATURE: SAFETY SWITCH (Y, N)	CONSTRUCTION MATERIAL (6): MOTOR HOUSING	CONSTRUCTION MATERIAL (6): FOOT	CONSTRUCTION MATERIAL (6): ARMATURE	BEARINGS (7): ARBOR	BEARINGS (7): BLADE POSITION (8)	WARRANTY (9)	COUNTRY OF ASSEMBLY (10)	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE (11)
BLACK & DECKER	7361	7 1/4	2 7/16	1 7/8	P	10	5300	HG	N	N	5/8	N	Y	Y	P	S	B	S	RH	2 yrs.	U	11.9	$103	$ 50
	7362	7 1/4	2 7/16	1 7/8	P	10	5500	HG	N	Y	5/8	N	Y	Y	P	S	B	S	RH	2 yrs.	U	12	122	60
BOSCH	1655	7 1/4	2 7/16	1 5/8**	P	13	5400	HG	N	Y	5/8	Y	Y	N	GN	A	B	B-R	RH	1 yr.	U	11.7	210	130
	1656	8 1/4	2 15/16	1 1/2*	P	13	5500	HG	N	Y	5/8	Y	Y	N	GN	S	B	B-R	RH	1 yr.	U	13	235	155
DEWALT	DW357	7 1/4	2 7/16	1 7/8	P	13	5500	HG	N	Y	5/8	Y	Y	Y	GN	S	B	B-R	RH	1 yr.	U	12.8	210	120
	DW360	7 1/4	2 7/16	1 7/8	P	13	5800	HG	Y	Y	5/8	Y	Y	Y	GN	A	B	B-R	RH	1 yr.	U	11.9	255	140
	DW364*	7 1/4	2 7/16	1 7/8	U	13	5800	HG	Y	Y	5/8	Y	Y	Y	GN	A	B	B-R	RH	1 yr.	U	12.3	275	150
	DW377	7 1/4	2 11/32	1 15/16	P	13	4300	WD	N	Y	D	Y	N	Y	CA	S	B	B	LH	1 yr.	U	16.5	280	165
HITACHI	C7SB	7 1/4	2 3/8	1 27/32	P	13	5500	HG	E	Y	5/8	Y	Y	Y	P	CA	B	B	RH	1 yr.	J	10.6	219	120
	C8	8 1/4	2 15/16	2 1/4	P	13	5000	HG	N	Y	5/8	Y	Y	Y	P	CA	B	B	RH	1 yr.	J	11	272	170
MAKITA	5820	7 1/4	2 1/2	1 11/16	P	7.5	4000	HG	E	N	5/8	N	Y	N/A	P	S	B	B	RH	1 yr.	J	7.7	200	115
	5007NB	7 1/4	2 3/8	1 3/4	P	13	5800	HG	N	Y	5/8	Y	Y	N	P	S	B	B	RH	1 yr.	J	11	225	120
	4200N	4 3/8	1 1/4	7/8	P	7.5	11000	HG	N	N	20mm	Y	Y	Y	P	S	B	B	LH	1 yr.	J	6.2	238	145
	5007NBA*	7 1/4	2 3/8	1 3/4	P	13	5800	HG	E	Y	5/8	Y	Y	N	P	A	B	B	RH	1 yr.	J	11	255	145
	5077B	7 1/4	2 3/8	1 7/8	P	13	4300	HY	E	Y	5/8	Y	Y	N	P	S	B	B	LH	1 yr.	J	13.9	273	145
	5201NA	10 1/4	3 3/4	2 1/2	P	12	3700	HG	E	N	5/8	Y	N	Y	CA	S	B	B	RH	1 yr.	J	18.3	655	359
	5402A	16 15/16	6 3/16	4 3/16	P	12	2200	HG	E	N	25mm	Y	N	Y	CA	S	B	B	RH	1 yr.	J	30.8	708	350
MILWAUKEE	6365*	7 1/4	2 3/8	1 25/32	D	13	5800	HG	N	Y	5/8	Y	N	N	GN	A	B	B-R	RH	*	U	11.5	214	125
	6460	10 1/4	3 15/16	2 7/8	D	15	5200	HG	N	N	3/4	Y	N	N	GN	S	B	B-R	RH	*	U	19.5	459	290
	6378*	8 1/4	2 7/8	2 1/4	P	15	4400	WD	N	Y	D	Y	N	N	GN	S	B	B-R	LH	*	U	17.2	334	210
	6369	7 1/4	2 3/8	1 25/32	D	13	5800	HG	E	Y	3/4	Y	Y	N	GN	A	B	B-R	RH	*	U	11.5	259	155
PORTER-CABLE	345	6	1 15/16	1 9/16	P	9	6000	HG	N	Y	1/2	Y	Y	N	GN	S	B	B-R	LH	1 yr.	U	9	190	127
	315-1*	7 1/4	2 7/16	1 25/32	D	13	5800	HG	N	N	5/8	N	Y	N	GP	A	B	B-R	RH	1 yr.	U	12.5	220	147
	314	4 1/2	1 5/16	1 1/16	P	4.5	4500	WD	N	N	3/8	Y	N	N	CA	S	B	B	RH	1 yr.	U	7	250	167
RYOBI	W-660	7 1/4	2 5/16	1 3/4	P	13	5000	HG	N	Y	5/8	N	Y	Y	P	S	B	B	RH	1 yr.	U	9.6	184	89
SEARS	27542	7 1/4	2 1/4	1 3/4	P	13	5000	HG	N	Y	3/4	Y	Y	Y	TP	S	B	B	RH	1 yr.	U	13.2	–	130
	10825	7 1/4	2 3/8	1 13/16	P	12	5000	HG	N	Y	1/2	N	Y	Y	P	S	B	B	RH	1 yr.	U	11.2	–	80
	10824	7 1/4	2 3/8	1 13/16	P	11	5000	SG	N	N	5/8	N	Y	Y	P	S	B-S	S	RH	1 yr.	U	10.2	–	60
	10823	7 1/4	2 3/8	1 13/16	P	10	5000	SG	N	N	3/8	N	Y	Y	P	S	B-S	S	RH	1 yr.	U	10	–	50
SKIL	77*	7 1/4	2 3/8	1 15/16	P	13	4400	WD	N	Y	D	Y	N	N	CA	S	B	B	LH	1 yr.	U	16.3	252	145
	5657	7 1/4	2 7/16	1 7/8	P	13	5400	HG	N	Y	5/8	Y	Y	N	GN	A	B	B-R	RH	1 yr.	U	11.3	205	130
	5510	5 1/2	1 3/4	1 5/16	P	6.5	4000	HG	N	N	1/2	Y	Y	N	GN	S	B	B-R	LH	1 yr.	U	6.5	166	115
	5525	6 1/2	2 1/16	1 5/8	P	13	5500	HG	N	Y	5/8	Y	Y	N	GN	A	B-S	B-R	RH	1 yr.	U	10.3	172	105
	5660	8 1/4	2 15/16	2 1/8	P	13	5800	HG	N	Y	5/8	Y	Y	N	GN	S	B	B-R	RH	1 yr.	U	13	230	145

NOTES:

* Similar machines available in both 7 1/4" and 8 1/4" sizes.

1. (D) Drop foot
   (P) Pivot foot
   (U) Unique
2. No-load speed determined when machine turns free (not cutting).
3. (HG) Helical gear
   (WD) Worm drive
   (HY) Hypoid
   (SP) Spur gear
4. (E) Electric brake
   (N) No
   (Y) Yes
5. (D) 5/8" arbor with diamond knock-out
6. (A) Aluminum
   (CA) Cast aluminum
   (GN) Glass-filled nylon
   (GP) Glass-filled polyester
   (P) Polycarbonate plastic
   (S) Steel
   (TP) Thermo-set plastic
7. (B) Ball bearing
   (R) Roller bearing
   (S) Sleeve bearing
8. (RH) Right-hand
   (LH) Left-hand
9. * Unlimited warranty against defective parts and workmanship.
10. (J) Japan
    (U) United States
11. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's production.

DUST COLLECTORS

Print this article

Today's power woodworking equipment produces mounds of sawdust ranging from fine particles to long shavings. To deal effectively with this debris you need to collect it at its source, before it has a chance to fill the air, or spill onto the shop floor. That's when dust collectors earn their keep.

Grizzly G1029

• ***Dust collectors versus shop vacuums.*** Most dust collectors have powerful induction motors designed for continual use, and big fans for moving large volumes of air. On the other hand, shop vacuums have loud universal motors intended for intermittent duty. These universal motors turn extremely fast (20,000–25,000 rpm versus 1725 or 3450 rpm for induction types), and drive relatively small fans. This configuration produces plenty of suction power (known as static pressure), but relatively little air velocity (cubic feet of air moved per minute).

What does this mean to you? Well, you may be able to get by with a shop vacuum if you need to collect dust from only one machine at a time, and if you can put up with the loud noise. Because most shop vacuums have little storage capacity compared to a dust collector, they quickly fill with debris when attached to machines such as planers that generate lots of shavings.

• ***Horsepower.*** The models in the chart *right* vary in horsepower from ½ hp to 3 hp. Generally, the machines with less than 1 hp will handle only one machine at a time, and do not have enough power for a central-collection system. You can connect most dust collectors with 1-hp motors to a small central-collection system, but you should leave only one blast gate open at a time. Two- and 3-hp units will handle larger collection systems with longer pipe runs, and will effectively draw dust from more than one machine at one time.

• ***Storage capacity.*** If you spend a lot of hours in your shop, and work with machines that produce large volumes of shavings, pay attention to the "debris storage capacity" column in the chart. Machines with less than 5 cubic feet of storage will require frequent changes under these circumstances. As the bottom bag fills, the filtration area decreases, and the machine draws less air

• ***Bag filtration.*** Unfortunately, you can't tell how effectively a bag filters dust-laden air until you turn on a dust collector. If visible particles pass through the bag, then get a new bag with a tighter weave. Keep in mind that a tighter weave will restrict the volume of air passing through the machine. So, you may have to get a larger tight-weave bag to maintain the air velocity the machine had with a loose-weave bag.

In our September 1992 evaluation of dust collectors, the Grizzly G1029 and Woodmaster 1033 topped 2- and 3-hp units. In the 1-hp range, we preferred the Sears 29978.

21 POPULAR DUST COLLECTORS: HOW THEY STACK UP

MANUFACTURER	MODEL	IMPELLER			MOTOR			SIZE (4) H X W X L (INCHES)	AIR VELOCITY (5)	DEBRIS STORAGE CAPACITY (CUBIC FEET)	ACCESSORIES (6)		WEIGHT (POUNDS)	WARRANTY		COUNTRY OF ASSEMBLY (7)	LIST PRICE	SELLING PRICE (8)
		IMPELLER MATERIAL (1)	HOUSING MATERIAL (1)	INLET DIAMETER (INCHES)	TYPE (2)	CONTINUOUS HORSEPOWER (3)	VOLTS				STANDARD	OPTIONAL		DUST COLLECTOR	MOTOR			
AMT	4710	SP	SS	4	TEFC	1	110/220	65x15x26	610	4	C	–	75	10 yrs.	1 yr.	T	$275	$240
BELSAW	MC-CT-80A	SP	SS	4	TEFC	3/4	115	69x18x32	600	1.9	C	*	70	1 yr.	90 days	T	375	279
	MC-1DC	SP	SS	1@5" or 2@4"	TEFC	2	230	79x22x51	1182	5.23	C	*	123	1 yr.	90 days	T	589	450
DELTA	50-075	SP	SS	4	ODP	3/4	110	63x21x24	453	2.8	C, H, DB	*	60	2 yrs.	2 yrs.	T	318	250
	50-180	CA	SS	5	TEFC	1	110/220	45x35x52	700	7.3	H	D, C, *	72	2 yrs.	2 yrs.	U	537	440
ENLON	ENDC10	SP	SS	4	TEFC	1	110/220	75x15x26	450	10.5	–	A	66	90 days	1 yr.	T	–	180
	ENDC30	SP	SS	3@4"	TEFC	3	110/220	75x22x50	1850	12	–	A	159	90 days	1 yr.	T	–	450
GRIZZLY	G1029	SP	SS	1@5" or 2@4"	TEFC	2	220	76x21x49	1182	4.5	C	H, A(4"-3"), *	135	3 mos.	1 yr.	T	–	295
	G1030	SP	SS	1@6" or 3@4"	TEFC	3	220	76x21x49	1883	9	C	H, A(4"-3"), *	170	3 mos.	1 yr.	T	–	455
JET	DC-650	SP	SS	4	TEFC	1	110	56x14x26	650	2.1	–	A, BH, H, PU	84	2 yrs.	2 yrs.	T	285	230
MAKITA	410	SP	SS	2 13/16"	U	*	110	30x24x48	N/A	7	H	A(4"-2 13/16"), *	20	1 yr.	1 yr.	T	567	298
PENN STATE	DC3	SP	SS	4	TEFC	1 1/2	110/220	17x19x45	750	2	H, A(4"-3"), A(4"-2")	–	46	1 yr.	1 yr.	T	–	210
	DC2	SP	SS	2@4"	TEFC	1 1/2	110/220	75x19x38	900	2.5	H, A(4"-3"), A(2@4"-2")	–	120	1 yr.	1 yr.	T	–	300
POWERMATIC	73	SP	SS	1@6" or 2@4"	TEFC	1 1/2	110/220	73x16x32	900	3	–	A(4"-3"), A(4"-2 1/2"), DB	125	1 yr.	1 yr.	T	431	400
	75	SP	SS	1@8" or 1@6" or 3@4"	TEFC	3	220	90x22x60	1900	10	–	Aux. Floor Vac.	215	1 yr.	1 yr.	T	732	700
RYOBI	1V28	CA	P	2 1/2"	U	2	110	30x20x20	N/A	N/A	C, D, EW, H, PU	–	29	1 yr.	1 yr.	U	200	129
SEARS	29978	SP	SS	4	TEFC	1	110	60x15x27	408	2.44	H, A(4"-2 1/2")	*, CK	75	1 yr.	1 yr.	T	–	300
SHOPSMITH	DC3300	P	P	1@4" or 3@2 1/2"	ODP	1/2	110	48x21x26	330	4	H(2), EW, A(2 1/2"-1 1/4"), DB(6), PU, C	BG, LF	64	1 yr.	1 yr.	U	459	459
WOODMASTER	1033	CA	CA	6	TEFC	3	220	72x24x44	1700	7.4	–	H, *	140	3 yrs.	1 yr.	U	–	499
WOODTEK	802-124	SP	SS	4	TEFC	1	110/220	60x15x24	650	N/A	A(4"-2")	N	85	1 yr.	1 yr.	T	–	229
	805-930	SP	SS	5	TEFC	2	110/220	77x24x34	1100	N/A	A(4"-2")	N	150	1 yr.	1 yr.	T	–	399

NOTES:

1. (CA) Cast aluminum
   (P) Plastic
   (SP) Steel plate
   (SS) Stamped steel
2. (ODP) Open, drip-proof induction motor
   (TEFC) Totally enclosed, fan-cooled induction motor
   (U) Universal motor
3. (*) 9 amps, no hp-rating available
4. Measured with machine turned on. With bags deflated, the Makita 410 measures 11x11x11", and the Penn State DC3 measures 17x18x18". The Woodmaster was measured with a 55-gallon drum beside it.
5. Maximum cubic feet per minute (CFM).
   N/A Not available
6. (A) Adapters
   (BG) Blast gate
   (C) Casters
   (CK) Complete kits available for hooking up collector to shop equipment
   (D) Drum
   (DB) Plastic dust bags
   (EW) Extension wands
   (H) Hose
   (LF) Large filter hood
   (PU) Dust-pickup attachments

   * Manufacturer offers accessories for adapting its dust collector to its own line of woodworking machines.
8. (T) Taiwan
   (U) United States
9. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's production.

JIGSAWS

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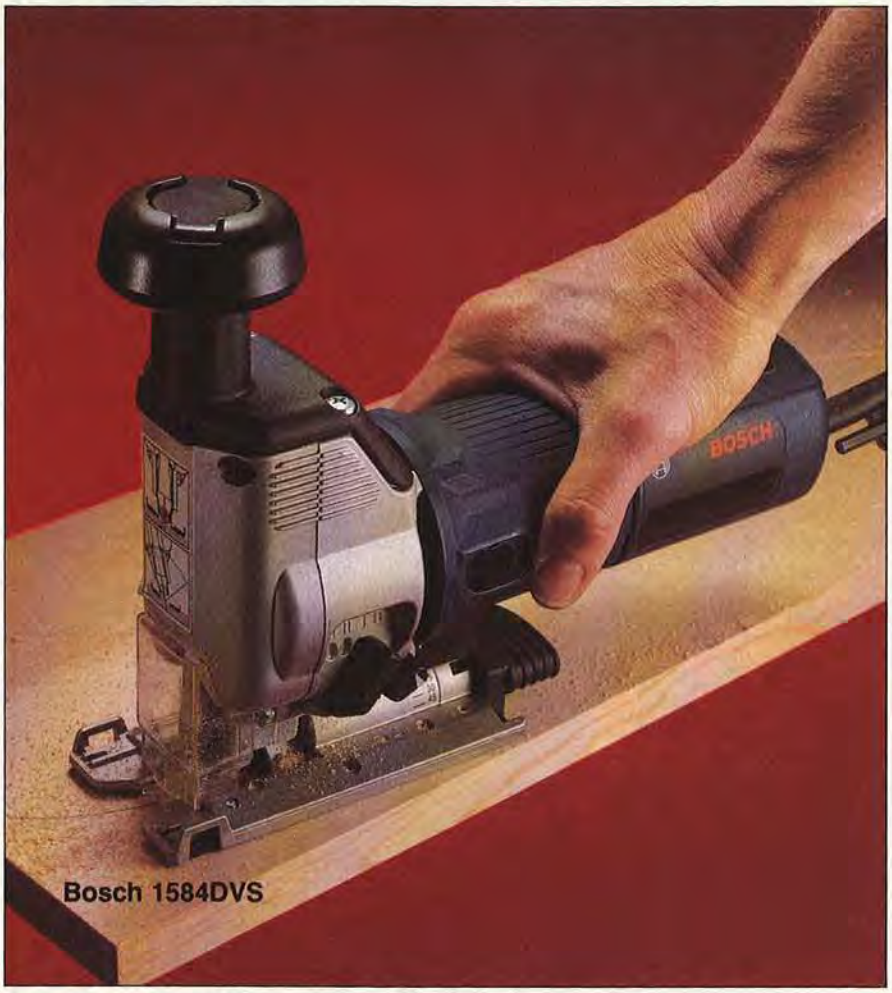


Bosch 1584DVS

No matter how you slice it, a jigsaw can handle a wider variety of cutting tasks than most any other power tool. How well it performs those tasks depends on its design and construction.

Key buying points

• ***Orbital action.*** If you like fast results, then consider orbital action a must-have feature. Here's how it works. All jigsaws move a blade in a straight, up-and-down fashion. But, those with orbital action also will move the blade forward on every upward cutting stroke. Some models have just one orbital setting; others have several settings that allow you to fine-tune the cutting action to your workpiece. Orbital action helps the saw cut with greater speed, but it also contributes to chipping.

• ***Speed control.*** Most jigsaws have some form of speed control to regulate the number of strokes per minute. If you want smooth, controllable cuts, we suggest you look at models with electronic speed control. These versions have a dial-operated variable-speed switch separate from the on-off trigger switch. The electronic models have circuitry that monitors the motor and increases power to keep the blade speed constant.

• ***Roller guides.*** Most better-quality jigsaws have a roller guide mounted just behind the blade. The guide supports the blade against the rearward pressure of cutting and side-to-side skewing. The roller guides help the saw deliver better cuts, and save wear-and-tear on the blade clamp and blade-shaft bearing.

• ***Handle type.*** You'll find two types of handles available on jigsaws: *closed loop* in which the motor housing and handle form a continuous D-shape; and *barrel* types that you grip by wrapping your hand around the motor housing. For best control in most woodworking applications, we prefer the barrel types with a knob located directly above the blade as shown *left.*

• ***Stroke length.*** Simply put, the longer the blade stroke (the distance it moves up and down), the better. Saws with longer strokes utilize more of the teeth on a blade in each cut, making the cuts faster. Also, you'll go through fewer blades because long strokes help blades stay sharper and cooler through heavy cutting.

In the *WOOD*® magazine IDEA SHOP™, we use the Bosch 1584DVS pictured *above left.* This jigsaw requires no tools for blade changes.

FOR THE ULTIMATE IN CUTTING FREEDOM: 31 JIGSAWS

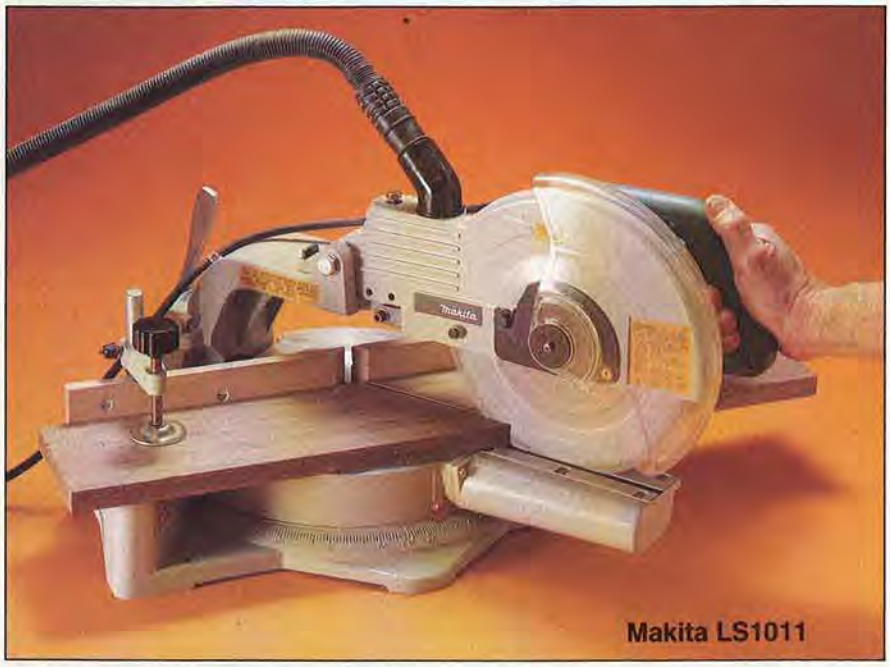
MANUFACTURER	MODEL	ORBITAL ACTION (Y, N)	BLADE TYPE (1)	ROLLER GUIDE (Y, N)	MOTOR CONTROLS: ELECTRONIC (E) OR CONVENTIONAL (C)	MOTOR CONTROLS: SWITCH TYPE (2)	MOTOR CONTROLS: SPEED CONTROL	STROKES PER MINUTE	STROKE LENGTH (INCHES)	AMPS	HANDLE TYPE (3)	BLADE LOCK (4)	BASE LOCK (4)	WARRANTY (5)	COUNTRY OF ASSEMBLY (6)	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE (7)
AEG	FSPE 100	Y	U	Y	E	S	DIAL	300-3,200	1	4.6	B/K	HK	HK	1 yr.	G	4.5	$269	$188
	BSPE 100AK	Y	U	Y	E	T	DIAL	450-3,200	1	4.6	CL	HK	HK	1 yr.	G	4.5	280	196
BLACK & DECKER	7568	N	U	Y	E	T	DIAL	800-3,200	9/16	3.5	CL	SS	SS	2 yrs.	UK	4	77	40
	7588	N	U	N	E	T	DIAL	0-3,100	9/16	3.5	CL/K	SS	SS	2 yrs.	UK	4.2	98	50
	3159	Y	U	Y	C	P	2-SPEED	2,100 & 3,100	1	4.5	B/K	HK	HK	1 yr.	U	6.3	248	145
BOSCH	3238 VS	Y	S	Y	C	T	VARI-TRIG	0-3,000	3/4	3.15	CL	HK	HK	1 yr.	S	4.5	186	120
	1584 DVS	Y	S	Y	E	S	DIAL	500-3,100	1	4.8	B/K	HT	HK	1 yr.	S	5.5	289	180
	1587 DVS	Y	S	Y	E	T	VARI-TRIG	500-3,100	1	4.8	CL	HT	HK	1 yr.	S	5.75	299	185
DEWALT	DW318K	Y	U	Y	C	T	VARI-TRIG	0-3,100	1	4.5	CL	HK	HK	1 yr.	U	6.2	258	150
	DW313	N	U	Y	C	T	VARI-TRIG	0-3,100	1	4.5	CL	HK	HK	1 yr.	U	6.2	228	135
HITACHI	CJ65VA2	Y	U	Y	E	S	DIAL	700-3,200	1	5.1	B/K	HK	HK	1 yr.	J	5.3	309	175
	CJ65V2	Y	U	Y	E	S	DIAL	700-3,200	1	5.1	CL	HK	HK	1 yr.	J	5.5	309	175
MAKITA	4320	Y	M or U	Y	C	T	VARI-TRIG	0-3,200	11/16	2.9	CL	HK	HK	1 yr.	J	2.9	148	100
	4301BV	Y	M or U	Y	C	T	VARI-TRIG	0-3,100	1	3.5	CL	HK	HK	1 yr.	J	6	278	165
	JV2000	Y	M or U	Y	C	P	VARI-TRIG	0-3,400	3/4	3.2	B/K	HK	HK	1 yr.	J	3.5	288	170
	4302C	Y	M or U	Y	E	T	VARI-TRIG	1,000-3,000	1	6	CL	HK	HK	1 yr.	J	5.5	334	175
MILWAUKEE	6246	N	U	Y	C	P	1-SPEED	3,100	1	3.8	B/K	SS	SS	*	U	6.5	254	155
	6256	N	U	Y	C	T	VARI-TRIG	0-3,100	1	3.8	CL	SS	SS	*	U	6.8	254	155
PORTER-CABLE	7349	N	U or S or P-C	Y	E	T	VARI-TRIG	0-3,200	1	4	CL	SS	NON-ADJ	1 yr.	U	6	195	135
	7549	Y	U or S or P-C	Y	E	T	DIAL	500-3,200	1	4.8	CL	SS	NON-ADJ	1 yr.	U	6.5	260	160
	7649	Y	U or S or P-C	Y	E	S	DIAL	500-3,200	1	4.8	B	SS	NON-ADJ	1 yr.	U	6	260	165
	548	Y	PC	N	C	T	VARI-TRIG	0-4,500	7/16	3.5	CL	HK	NON-ADJ	1 yr.	U	6	345	205
RYOBI	JS45	N	U	Y	C	T	VARI-TRIG	0-3,000	5/8	2.5	CL	HK	HK	1 yr.	U	3.2	89	49
	JS045	Y	U	Y	C	T	VARI-TRIG	0-3,000	5/8	3	CL	HK	HK	1 yr.	U	3.5	162	99
	JSE60	Y	U	Y	E	T	DIAL	1,000-2,700	1	3.5	CL	PS	PS	1 yr.	U	5.5	250	145
SEARS	17204	N	U	N	C	T	VARI-TRIG	0-3,000	5/8	2.5	CL	SS	PS	1 yr.	U	3.5	–	40
	17207	N	U	N	C	T	DIAL	0-3,000	5/8	2.5	CL/K	SS	PS	1 yr.	U	3.7	–	50
	17211	N	U	N	C	T	DIAL	0-3,000	3/4	2.5	CL/K	HK	PS	1 yr.	U	5.4	–	80
SKIL	4540	N	U	N	C	T	VARI-TRIG	0-3,200	13/16	3.5	CL/K	HK	SS	1 yr.	U	5.5	125	85
	4560-02	N	U	N	C	T	VARI-TRIG	0-3,200	13/16	3.5	CL/K	HK	SS	1 yr.	U	5.5	144	95
	4580-02	Y	U	N	C	T	VARI-TRIG	0-3,200	13/16	3.5	CL/K	HK	SS	1 yr.	U	5.7	161	125

NOTES:

1. (M) Makita
   (P-C) Porter-Cable
   (S) Shoulder
   (U) Universal
2. (P) Paddle
   (S) Slide
   (T) Trigger
3. (B) Barrel grip
   (B/K) Barrel/knob grip
   (CL) Closed loop
   (CL/K) Closed loop/knob
4. (HK) Hex key
   (HT) Hand tightened
   (NON-ADJ) Not adjustable
   (PS) Phillips screw
   (SS) Slotted screw
5. * Unlimited warranty against defective parts and workmanship.
6. (G) Germany
   (J) Japan
   (S) Switzerland
   (UK) United Kingdom
   (U) United States
7. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's production.

MITERSAWS

Print this article



Makita LS1011

More and more woodworkers are discovering the benefits of a power mitersaw, such as cutting speed, accuracy, portability, and ease of adjustments. Some models even help you make compound cuts and crosscut stock 12" wide.

Key buying points

• ***Choose the right type.*** Here's a discussion of the three types of mitersaws listed in the chart *right*:

Angle-only mitersaws. Usually costing less than $200, these saws work like an old-fashioned miterbox except that a motorized circular blade, mounted to a rotating turntable, does the cutting. You can cut miters up to 45° to the left or right.

Compound mitersaws work just like the angle-only versions, except that the motor/blade assembly also tilts left up to 45° for compound cuts. In our tests, these versions tended to cut with less accuracy and smoothness than the angle-only versions.

Sliding-compound mitersaws, like the one *above* have motor/blade assemblies that slide forward and backward for wide crosscuts (up to 12" on most models). These have sturdier tilt mechanisms than the compound mitersaws, and yield cuts comparable in quality to those achieved with angle-only mitersaws.

Note: For examples of angle-only and compound mitersaws, see our reviews of two such products on pages 39 and 42.

• ***Cutting capacity.*** The saws in the chart have blade sizes ranging from 6½" to 15", with 10" versions being the most popular. That's because 10" blades deliver enough capacity for most woodworkers, and you will find the greatest variety of blades in the 10" size.

We asked manufacturers to supply us with the cutting capacities of their mitersaws as shown in the chart *right*. Keep in mind that for many of the listed saws, these capacities reflect maximum cutting dimensions, not necessarily the thickness and width of the largest workpiece that the machine will handle. For example, the Milwaukee 6490 will make crosscuts up to 3½" deep, and as wide as 5⁹⁄₁₆", but it will not crosscut a 3½"-thick, 5⁹⁄₁₆"-wide workpiece.

• ***Blades and blade changing.*** Most mitersaws come with steel blades capable only of rough cuts. Our advice: replace this blade with a carbide-tipped one with 60 teeth. Otherwise, you won't realize the potential of the machine.

For optimum control with sliding-compound mitersaws, choose a blade with 5° negative hook. These blades cut less aggressively and tend to push the workpiece against the table and fence.

Before making a purchase, check how easily you can change the mitersaw's blade. Some models have arbor nuts obstructed by hard-to-remove blade guards. Spindle locks help make for easy blade changes on some models.

The following mitersaws have earned favorable ratings in previous issues of *WOOD®* magazine. *Angle-only*: all Hitachi models, Delta 34-080, and the Ryobi TS254. *Compound models:* Sears 23468 and Ryobi TS200. *Sliding-compound* versions: Hitachi C8FB, Sears 23488, and Makita LS1011.

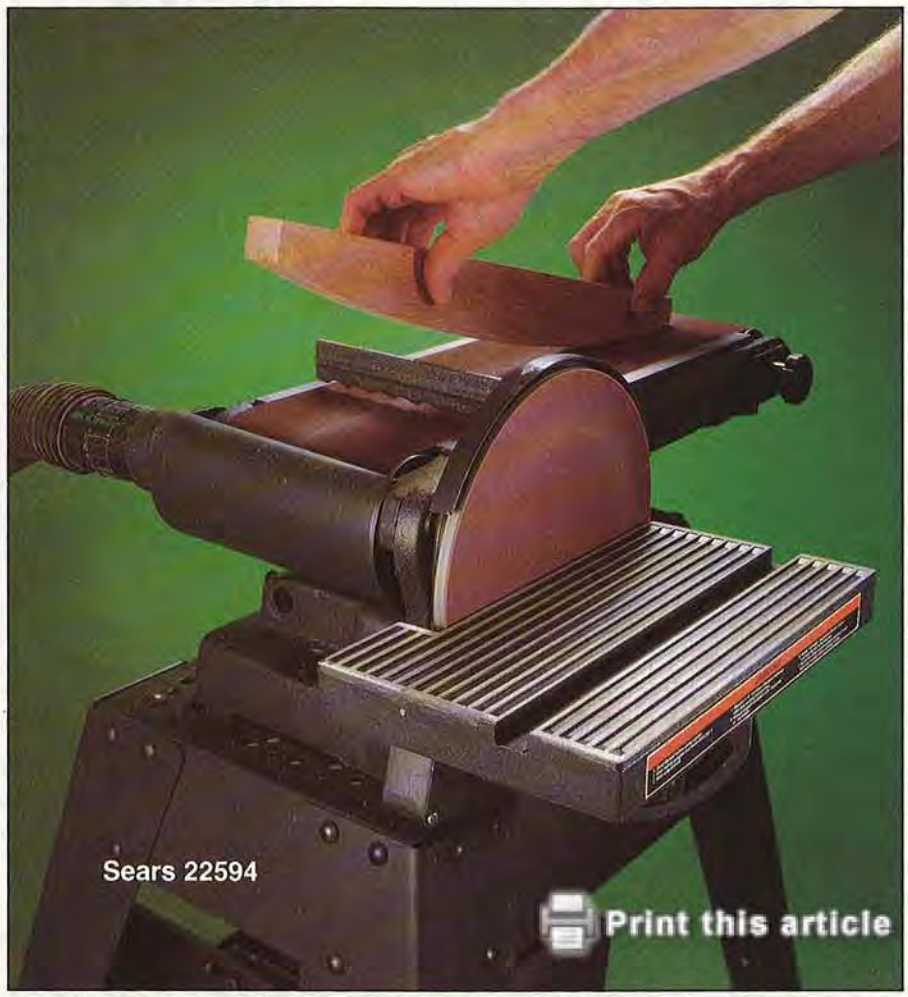
CROSS-CUTTING SPECIALISTS: 26 MITERSAWS

	MANUFACTURER	MODEL	BLADE SIZE (INCHES)	CAPACITY (1)				MOTOR			BASE MATERIALS (3)		ACCESSORIES (4)		HANDLE TYPE (5)	WARRANTY (6)	WEIGHT (POUNDS)	COUNTRY OF ASSEMBLY (7)	LIST PRICE	SELLING PRICE (8)
				CROSSCUT	45° MITER	45° BEVEL	COMPOUND 45° MITER 45° BEVEL	AMPS	SPINDLE LOCK (Y, N)	DRIVE (2)	FRAME	TURNTABLE	STANDARD	OPTIONAL							
SLIDING-COMPOUND MITERSAWS	AEG	SKS 300	10	2 1/16 x 11 25/32	2 1/8 x 8 5/16	2 1/8 x 11 25/32	2 1/8 x 8 5/16	9.5	Y	D	A	A	–	DH, LG, LS, QC, WT	H	1 yr.	46.3	G	$999	$700
	DELTA	Sawbuck 33-055	8	2 3/4 x 16	1 3/4 x 12	1 3/4 x 16	1 3/4 x 12	15	Y	G	P	P	–	–	D	2 yrs.	78	U	736	600
		Sidekick 33-060	6 1/2	1 3/4 x 12	1 3/4 x 9 1/2	1 5/8 x 12	1 5/8 x 9 1/2	12	Y	G	A	A	–	SC, LG	D	2 yrs.	42	T	499	375
	HITACHI	C8FB	8 1/2	2 9/16 x 12	2 9/16 x 8 5/8	1 25/32 x 12	1 25/32 x 8 21/32	9.5	Y	G	A	A	DB	LG, SC, SG	D	1 yr.	37.4	J	946	450
	MAKITA	LS1011	10	2 15/16 x 12	2 15/16 x 8 15/32	1 9/16 x 12	1 9/16 x 8 15/32	12	Y	G	A	A	DB, SC	SG	D	1 yr.	34.8	J	901	450
	RYOBI	TSS220	8 1/2	2 9/16 x 12	2 9/16 x 8 5/8	1 25/32 x 12	1 25/32 x 8 5/8	10	Y	G	A	A	DB	WT, SC, SG	D	1 yr.	44	U	966	525
	SEARS	23488	8 1/4	2 1/2 x 12	2 1/2 x 8 5/8	1 3/4 x 12	1 3/4 x 8 5/8	10	Y	G	CI	A	SC	DB	D	1 yr.	70	T	–	449
COMPOUND MITERSAWS	DELTA	36-040	8 1/4	2 1/8 x 5 1/8	2 1/8 x 3 1/2	1 1/2 x 5 1/8	1 1/2 x 3 1/2	9	Y	G	A	A	DB	–	D	2 yrs.	15.75	T	186	170
		36-220	10	2 3/4 x 5 1/8	2 3/4 x 3 1/2	1 3/4 x 5 1/8	1 3/4 x 3 1/2	15	Y	G	CI	A	DB, SC, SG	–	D	2 yrs.	60	T	309	245
	DEWALT	DW705	12	2 1/2 x 7 7/8	2 1/2 x 5 1/2	1 3/4 x 3 7/8	1 3/4 x 5 7/8	13	Y	G	A	A	–	DB, LG, QC	H	1 yr.	38	U	658	365
	RYOBI	TS200	10	3 5/16 x 5 3/4	3 5/16 x 4 3/4	2 1/16 x 4 3/4	2 1/16 x 4 3/16	12.5	Y	G	CI	CI	DB, SC, SG	WT	C	1 yr.	52	T	486	259
	SEARS	23468	8 1/4	2 1/16 x 5 1/2	2 1/16 x 3 3/4	1 1/2 x 5 1/2	1 1/2 x 3 3/4	9	N	G	CI	CI	–	DB	C	1 yr.	37.5	T	–	150
		23460	10	2 5/8 x 5 3/4	2 5/8 x 4 1/4	1 7/8 x 5 3/4	1 7/8 x 4 1/4	15	Y	G	CI	CI	DB	CC, LS, SC, SG	C	1 yr.	60	T	–	250
ANGLE-ONLY MITERSAWS	BLACK & DECKER	1701	10	3 1/8 x 4 3/4	3 1/8 x 3 3/8	–	–	10	N	G	A	A	DB	–	D	2 yrs.	28	U	306	169
	DELTA	36-090	10	2 1/2 x 5 1/2	2 1/2 x 3 7/8	–	–	12	Y	B	A	A	DB	SC, SG	D	2 yrs.	30	T	293	225
		34-080	10	2 1/2 x 5 3/4	2 3/8 x 4	–	–	13	N	B	CI	A	–	DB	D	2 yrs.	55	T	265	210
	DEWALT	DW704	12	2 1/2 x 7 7/8	2 1/2 x 5 1/2	–	–	13	Y	G	A	A	–	DB, LG, QC	H	1 yr.	38	U	560	300
	HITACHI	C10FA	10	3 1/8 x 4 5/16	3 1/8 x 3 1/8	–	–	15	Y	G	A	A	DB, SC, SG	LG	C	1 yr.	44	J	581	275
		C12FA	12	3 3/4 x 5 5/8	3 3/4 x 3 9/16	–	–	15	Y	G	A	A	DB, SC, SG	LG	C	1 yr.	40	J	630	305
		C15FB	15	4 3/4 x 7 9/32	4 3/4 x 5 15/32	–	–	15	Y	G	A	A	DB, SC, SG	LG	C	1 yr.	55	J	812	375
	MAKITA	LS1020	10	3 1/2 x 3 1/2	3 1/2 x 2 1/2	–	–	12	Y	G	CI	CI	DB, SC	SG	C	1 yr.	40	J	600	310
		LS1030	10	2 3/4 x 4 15/16	2 3/4 x 3 1/2	–	–	12	Y	G	A	A	DB, SC	SG	C	1 yr.	23.3	U	428	260
	MILWAUKEE	6490	10	3 1/2 x 5 9/16	3 1/2 x 3 7/8	–	–	15	Y	D	A	A	DB, SC, SG	–	C	*	31.5	U	440	275
	RYOBI	TS254	10	3 9/16 x 5 9/16	3 9/16 x 3 7/8	–	–	12.5	Y	G	A	A	–	DB, LG, SC, SG, WT	C	1 yr.	33.5	U	397	200
		TS380	15	4 13/16 x 7 1/4	4 13/16 x 5 7/16	–	–	15	Y	G	A	A	DB	LG, SC, SG	C	1 yr.	50.6	J	793	470
	SKIL	3810	10	3 1/2 x 4 1/4	3 1/2 x 3 1/2	–	–	15	Y	G	CI	CI	DB	SC, SG	C	1 yr.	51	T	358	210

NOTES:

1. Height x width (inches)
2. (B) Belt
   (D) Direct
   (G) Gear
3. (A) Aluminum
   (CI) Cast iron
   (P) Plastic
4. (CC) Carrying case
   (DB) Dust bag
   (DH) Dust hose
   (FL) Folding legs
   (LG) Long extension guides
   (LS) Length stop
   (QC) Quick-action clamps
   (SC) Screw clamps
   (SG) Short extension guides
   (WT) Worktable
5. (C) Chop-style
   (D) D-handle
   (H) Horizontal D-handle
6. * Unlimited warranty against defects in workmanship and materials.
7. (G) Germany
   (J) Japan
   (T) Taiwan
   (U) United States
8. Selling prices based on adverstisements, catalogs, and dealer inquiries at time of article's production.

STATIONARY BELT SANDERS



No matter what your needs might be, there's a stationary belt sander designed to help give you better results. You can choose from tiny strip sanders that fit under one arm to wood-devouring behemoths weighing several hundred pounds.

Key buying points

• ***Belt size.*** As you can see in the chart *right,* the belts on these machines vary from 1" wide and 30" long to 6" wide and 89" long. The machines with 1"-wide belts (referred to as strip sanders), typically fit on a benchtop. The abrasive strip runs vertically, and comes in handy for metal sharpening, sanding into tight areas, and other light tasks.

Most of the machines with 4×36" belts are also benchtop units, with the belt running horizontally. These machines perform a wide variety of tasks, but they don't have the power necessary for heavy stock removal.

Probably the most popular size for woodworkers, sanders with 6×48" belts have enough muscle to quickly remove large amounts of stock. Typically, the belt and its supporting platen operate in both vertical or horizontal positions.

For the most part, you'll find belts longer than 48" on edge sanders. With these, the belt is positioned so it faces you and runs horizontally as you stand in front of the machine. A large table allows you to sand the edges of sizeable workpieces.

• ***Disc size.*** Most stationary belt sanders have sanding discs alongside the belt, but a few do not (see chart). You'll find discs handy for touchup work on small objects, or anytime you need to sand a perfectly flat surface, such as a miter. Generally, discs range in diameter from 5" to 12". Keep in mind when choosing a model that you can only use about half of the diameter of a disc. So, with a 12" disc you can sand edges up to 6" long.

• ***Belt adjustments.*** If you have a chance to personally inspect a model before making a purchase, check how much effort it takes to change belts. With some machines, you need only flip a tension-release lever. Others require you to use handtools to loosen various bolts or screws.

If you can turn the unit on, check the difficulty of making tracking adjustments. Once set, the belt should track true time after time.

• ***Dust collection.*** These machines throw off *a lot* of dust, so we consider dust-collection a mandatory feature. If you buy a machine without dust-collection, you may find yourself fashioning a collection port from sheet metal, plywood, or PVC pipe.

EXPERTS AT ABRASION: 34 STATIONARY BELT SANDERS

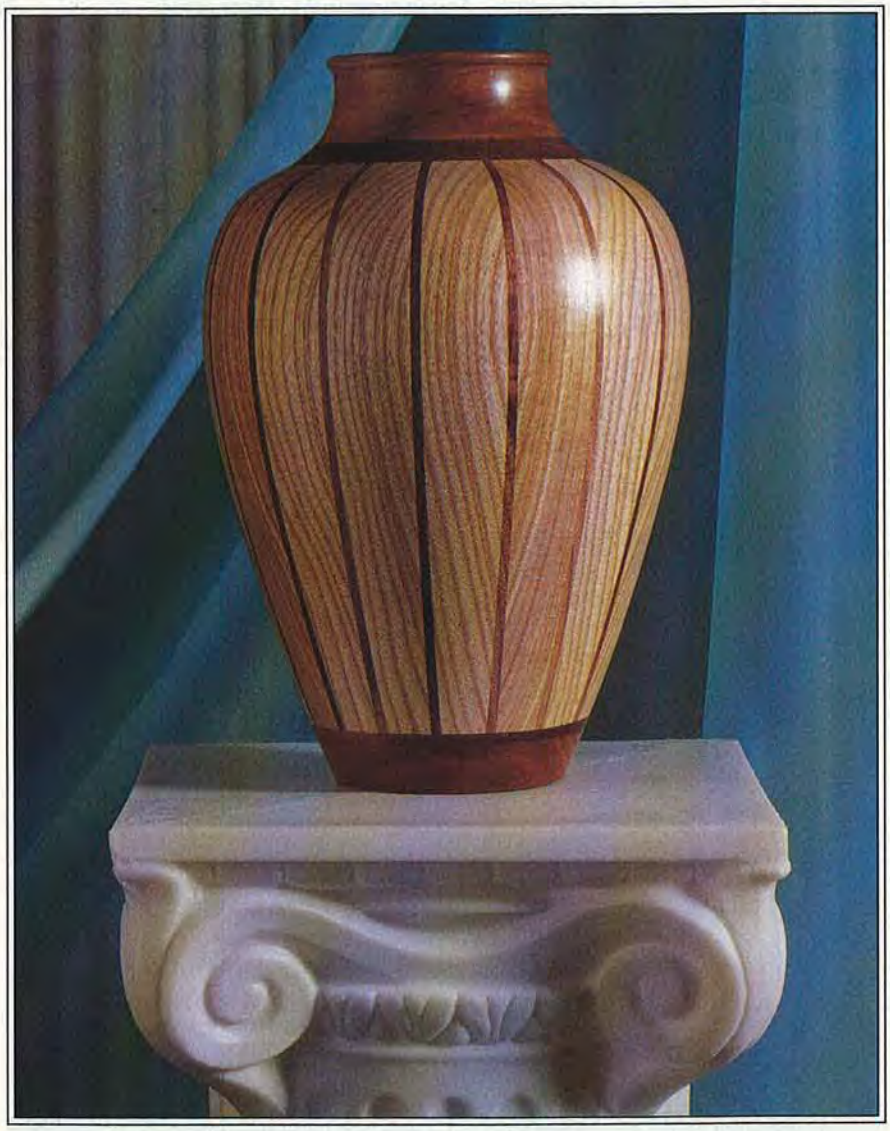
MANUFACTURER	MODEL	BELT SIZE (WIDTH X LENGTH, INCHES)	DISC SIZE (DIAMETER IN INCHES)	TYPE (1)	MOTOR				FEET PER MINUTE (BELT)	TRACKING (4)	BELT ADJUSTMENTS			TABLE MATERIAL			WARRANTY				LIST PRICE	SELLING PRICE (8)
					RPM	CONTINUOUS HORSEPOWER	VOLTS	TYPE (3)			REMOVAL (5)	LOCKING TENSION RELEASE (Y, N)	PLATEN MATERIAL (6)	BELT (6)	DISC (6)	DUST COLLECTION (Y, N)	SANDER	MOTOR	WEIGHT (POUNDS)	COUNTRY OF ASSEMBLY		
AMT	4150	1 x 42	8	S	MOTOR NOT INCLUDED (2)				3150	K	B/G	N	S	S	A	N	10 yrs.	1 yr.	45	T	$ 110	$ 88
BELSAW	MC-1SG	1 x 30	None	S	3450	1/6	115	T	3000	K	K/G	N	S	A	None	Y	1 yr.	90 days	12	T	99	80
	MC-4/6BD	4 x 36	6	V/H	1720	1/3	115	T	2200	K	L	Y	S	A	A	N	1 yr.	90 days	20	T	149	139
	MC-6/9BD	6 x 48	9	V/H	1720	3/4	115/230	T	2100	K	K	N	S	A	A	N	1 yr.	90 days	130	T	420	299
	MC-6ES	6 x 89	None	E/H	3600	2	110/220	T	3900	K	K/G	Y	S	CI	None	Y	1 yr.	90 days	231	T	789	669
DELTA	31-050	1 x 30	None	S	3450	1/5	110	T	3150	K	K/G	N	S	A	None	Y	2 yrs.	2 yrs.	13	T	104	85
	31-460	4 x 36	6	H	3450	1/3	110	T	2000	K	S/G	Y	S	A	A	Y	2 yrs.	2 yrs.	42	T	198	140
	31-770	6 x 48	12	V/H	3450	1 1/2	110/220	O	1971	K	S/G	Y	CI	CI	CI	Y	2 yrs.	2 yrs.	250	U	815	N/A
	31-730* 52-611	6 x 48	12	V/H	3450	1 1/2	110/220	T	3030	K	K/G	Y	CI	CI	CI	Y	2 yrs.	2 yrs.	288	U	1,490	1,250
DREMEL	1731	1 x 30	5	S/V	3450	1/6	120	T	3150	K	K/G	N	S	S	S	Y	1 yr.	1 yr.	15	T	185.50	129
ENLON	ENSN130	1 x 30	None	S	3450	1/6	110	T	3150	K	S/G	N	S	A	None	Y	90 days	1 yr.	14	T	–	60
	ENSN18	1 x 42	8	S	1720	1/2	110/220	T	3000	K	S/G	N	S	S	A	N	90 days	1 yr.	52	T	–	108
	ENSN46	4 x 36	6	V/H	3450	1/3	110	T	2000	K	S/G	Y	S	A	A	Y	90 days	1 yr.	48	T	–	115
	ENSN69	6 x 48	9	V/H	3450	3/4	110/220	T	2100	K	K/S	N	CI	A	A	N	90 days	1 yr.	110	T	–	185
GRIZZLY	G1014	6 x 48	9	V/H	1720	3/4	110/220	T	2323	K	L	Y	CI	CI	CI	N	3 mos.	1 yr.	125	T	–	195
	G1072	6 x 48	None	E	1720	3/4	110/220	T	2300	K	L	Y	CI	CI	None	Y	3 mos.	1 yr.	132	T	–	225
	G1183	6 x 48	12	V/H	3450	1	110	TE	5000	K	L/G	N	CI	CI	CI	N	3 mos.	1 yr.	160	T	–	425
	G1531	6 x 80	None	E	1720	1 1/2	110/220	T	2000	K	L/G	Y	CI	CI	None	Y	3 mos.	1 yr.	300	T	–	425
JET	JSG-96	6 x 48	9	V/H	1720	3/4	110	T	1525	B	S/G	N	CI	CI	CI	Y	1 yr.	1 yr.	119	T	428	340
	JSG-6	6 x 48	12	V/H	1720	1 1/2	110/220	T	2500	K	S/G	Y	CI	CI	CI	Y	1 yr.	1 yr.	150	T	756	595
PENN STATE	S48	4 x 36	8	H	1720	1/3	110	T	1145	K	L	Y	S	A	A	Y	1 yr.	1 yr.	40	T	–	110
	X69B	6 x 48	9	V/H	1720	3/4	110	T	1290	B	L	Y	CI	A	A	Y	1 yr.	1 yr.	110	T	–	240
POWERMATIC	83	6 x 48	10	V/H	3450	3/4	110/220	T	5000	K	K/G	Y	S	CI	CI	Y	1 yr.	1 yr.	120	T	560	450
	13	6 x 89	None	E	1725	1 1/2	110/220	T	3600	K	K/G	Y	S	CI	None	Y	1 yr.	1 yr.	245	T	815	640
	30 B	6 x 48	12	V/H	1800	1 1/2	110/220	T	2850	K	K/G	Y	CI	CI	CI	Y	1 yr.	1 yr.	315	U	1,507	1,200
SEARS	22643	4 x 36	6	H	3200	1/3	110	O	2000	K	L	Y	NA	S	A	Y	1 yr.	1 yr.	44	T	–	120
	22632	1 x 42	8	S	1725	1/3	110	T	3000	S	L/G	Y	S	CI	A	N	1 yr.	1 yr.	57	T	–	190
	22594	6 x 48	9	V/H	3450	3/4	110	O	2700	K	L/G	Y	NA	CI	A	Y	1 yr.	1 yr.	133	T	–	400
SHOPSMITH	555355 & 505993	6 x 48	None	V/H	1725	1/2	110	O	3300, 4970	K	K	Y	S	CI	None	Y	1 yr.	1 yr.	80	U	554	499
	555309 & 555370	1 x 42	None	S	1725	1/2	110	O	2836, 4262, 5688	K	K/G	N	S	A	None	Y	1 yr.	1 yr.	60	U	404	359
SKIL	3370	4 x 36	6	H	3450	1/3	110	O	2000	K	S/G	N	S	A	A	Y	2 yrs.	2 yrs.	42	T	190	140
WOODTEK	816-847	1 x 30	None	S	3450	1/6	115	T	3150	K	K/G	N	A	A	A	Y	1 yr.	1 yr.	143	T	–	70
	829-792	4 x 36	6	H	3450	1/3	115	T	2000	K	L	Y	S	S	A	N	1 yr.	1 yr.	42	T	–	109
	814-253	6 x 48	9	V/H	1800	3/4	110/220	T	2100	K	L	N	CI	CI	A	N	1 yr.	1 yr.	N/A	T	–	269

NOTES: * 31-730 is the sanding machine; 52-611 is the steel stand, including motor.

1. (E) Edge (H) Horizontal (S) Strip (V) Vertical
2. Several motors available
3. (T) Totally enclosed-fan cooled (O) Open-drip proof (TE) Totally enclosed
4. (B) Bolt-controlled (K) Knob-controlled (S) Screw-controlled
5. Parts that you'll have to remove or manipulate in order to remove belt: (B) Bolts (G) Belt guard (K) Knob (L) Lever (S) Screws
6. (A) Aluminum (CI) Cast iron (S) Steel
7. (T) Taiwan (U) United States
8. Selling prices based on advertisements, catalogs, and dealer inquiries at time of article's production.

Update: See April 1994 issue (no. 69), page 11 for updated drawings.

Print this article



AGELESS URN

Classic beauty in a staved turning

When *WOOD*® magazine Art Director Lee Gatzke starts cutting staves for one of his segmented turnings, you can bet the resulting vessel will be something special. Lee's latest project, this graceful Grecian urn in ash, cherry, and walnut, is no exception. Here's how to turn one just like it.

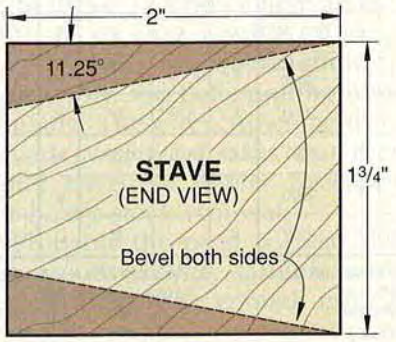
We used the following tools and supplies:

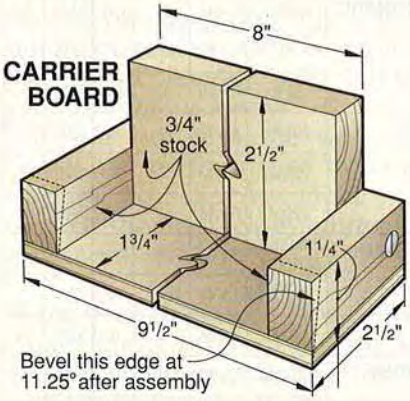
Stock
See the Bill of Materials

Lathe tools
- 4" or 6" faceplates (You'll need two)
- ¾" and ½" bowl gouges
- ¾" round-nose scraper
- ¾" square-end scraper
- Parting tool

Lathe speeds
Roughing: 500-800 rpm
Finishing and sanding: 1,200–1,500 rpm

Cut 16 blanks and four pieces of scrapwood to the dimensions shown for parts A in the Bill of Materials. Set the scrapwood pieces aside for now. Bevel each blank on both sides to form the body staves (see





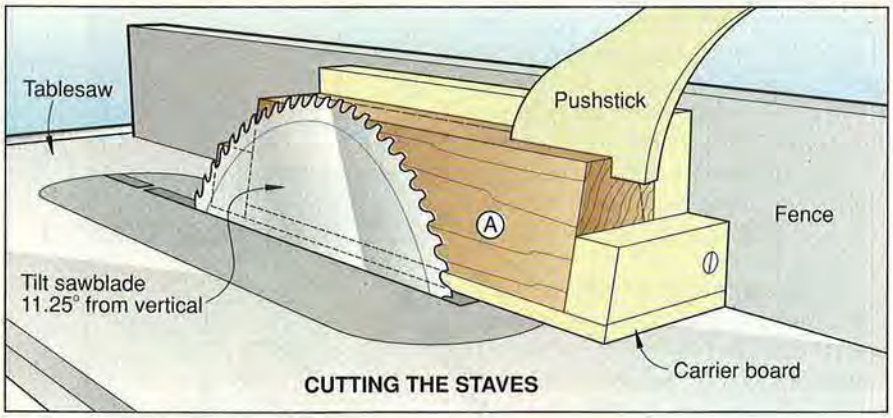
the Stave End View drawing, *left*). To perform the operation safely and accurately, construct the carrier board shown *above*.

Tilt your tablesaw's blade toward the rip fence, 11¼° from vertical or 78¾° from the table. (We used an adjustable triangle from an art-supply store to set the blade. We then made several cuts on scrapwood and gauged the angles to confirm the setting.)

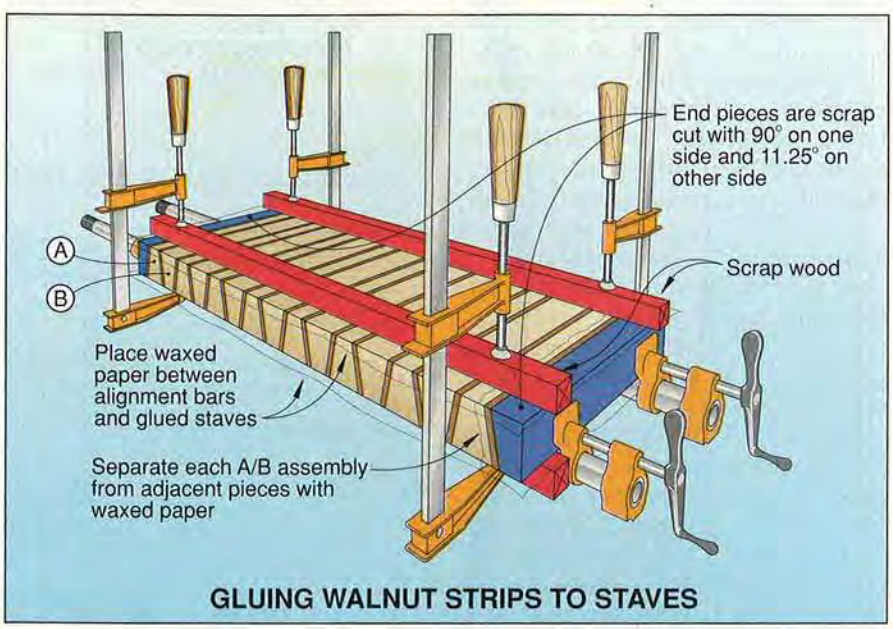
Adjust the saw's rip fence to give a 1¾" cutting width where shown on the top surface of the carrier board base. (Don't set the fence by measuring from it to the blade on the saw table. To allow for the thickness of the carrier board back and the thickness of the board base, make your measurement on the carrier board itself.) Trim off the edge of the carrier board with the saw.

Bevel each side of each blank, placing the stock into the jig with the same edge down for each cut. This maintains the full 1¾" thickness on one edge, which will be the outside of the staved cylinder. (See the Cutting the Staves drawing, *top right*). Bevel one side on each of the four scrapwood pieces for use later.

Dry-clamp the staves to form a cylinder, using a band clamp. The joints should fit tightly; correct any gaps by sanding with a stationary belt or disc sander. Number the staves, and mark the top of each to enable later reassembly in the same order.



CUTTING THE STAVES


End pieces are scrap cut with 90° on one side and 11.25° on other side
A
B
Scrap wood
Place waxed paper between alignment bars and glued staves
Separate each A/B assembly from adjacent pieces with waxed paper
GLUING WALNUT STRIPS TO STAVES

Walnut slices spice it up

Measure the width of a stave's sloped side. With the blade still tilted, rip ⅛"-thick walnut stock to that width for parts B. To do this, saw one edge, and then flip the stock to place the opposite face down as you saw the other edge. This way, you'll make the bevels parallel. Crosscut the 16 body accents (B) from the beveled stock.

Glue one accent (B) to the right side (looking at the widest edge) of each stave, using the following procedure for clamping the beveled pieces. Assemble the parts in two groups of eight with pipe clamps. Arrange the bevels alternately up and down, and separate each A-B set from adjoining ones with waxed paper.

Fit one of the beveled scrapwood pieces (shown *above* in *blue*) at each end to provide a clamping surface. Close the clamp lightly to hold the parts and scrapwood packing in position. But don't tighten the clamps yet or the tapered staves will squirt out as you apply pressure.

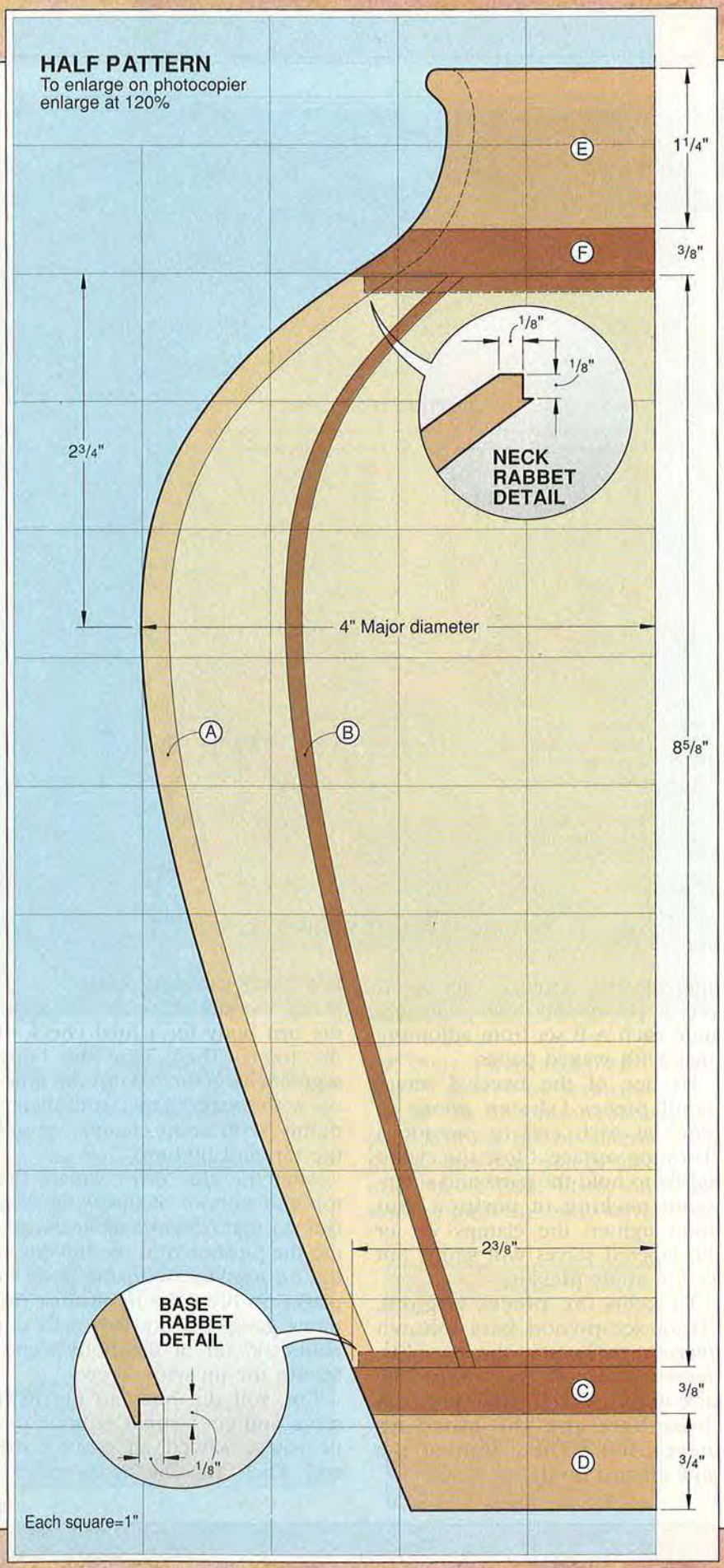
To keep the pieces aligned, clamp scrapwood bars (shown *above* in *red*) across the assembly, perpendicular to the joints. (Be sure to put waxed paper between these bars and the glued-up pieces, too.) Then, tighten the pipe clamps firmly.

It's body-building time

When the glue dries, dry-assemble the urn body for a final check of the joints. Then, glue the body segments together. Wrap the glue-up with waxed paper, and clamp tightly with strap clamps around the top and bottom.

After the glue dries, square the top and bottom of the body. You can do that on your tablesaw, using the jig shown in the *top* drawing on *page 63*. With the body in place, position the jig against the miter gauge so the saw will cut about ⅛" off of the body's end. Secure the jig with screws.

Cut, roll the body to the next stave, and cut again. Continue until you've sawed all around the end. Then, flip the body end-for-



end, place a piece of ⅛"-thick hardboard between the just-trimmed end and the back wall of the jig, and repeat the operation.

Next, center and glue the body on a ¾"-thick auxiliary faceplate for turning. (We attached the auxiliary faceplate to a 6"-diameter faceplate.) Mount on the lathe.

Start turning the body

With a ½" bowl gouge, round the body to 8" diameter. Draw a line around the turning 2¾" from the top (the headstock end) to mark the major diameter. Establish the 4½" bottom diameter. Now, form a curved taper from the major-diameter line to the bottom. (To check your work, cut a cardboard template of the half-pattern.)

Next, shape the inside of the urn. With the bowl gouge, clean out the interior as far as you can reach, preferably about halfway into the urn. Turn to a uniform wall thickness of 3/16-¼". (See Stage One of the Body Turning drawing, *opposite page.*)

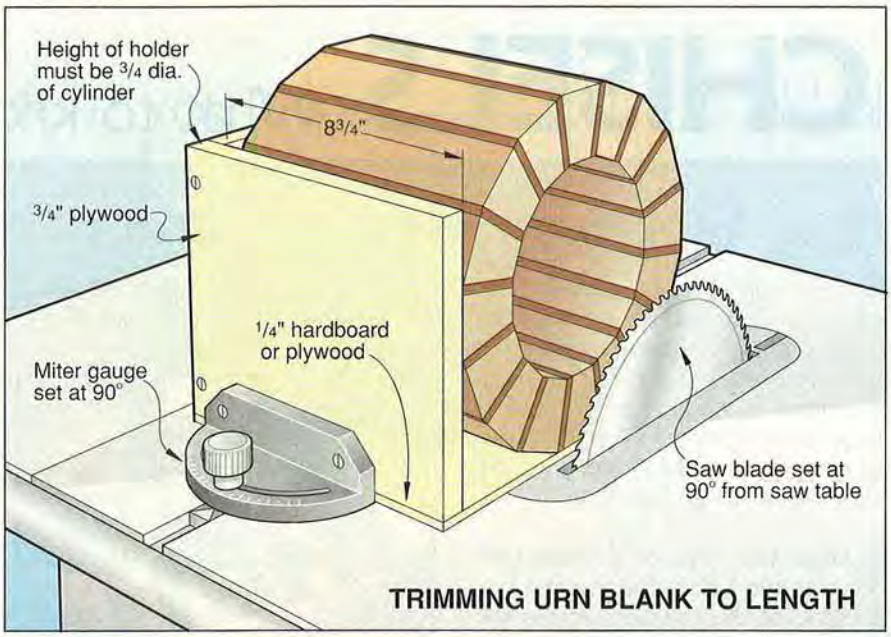
Square off the bottom of the body with a square-end scraper. Then, with the parting tool, cut straight in to form the ⅛"-deep rabbet for the base. (See the Base Rabbet Detail, *left*).

Dismount the faceplate assembly and turning from the lathe. Detach the metal faceplate from the auxiliary faceplate.

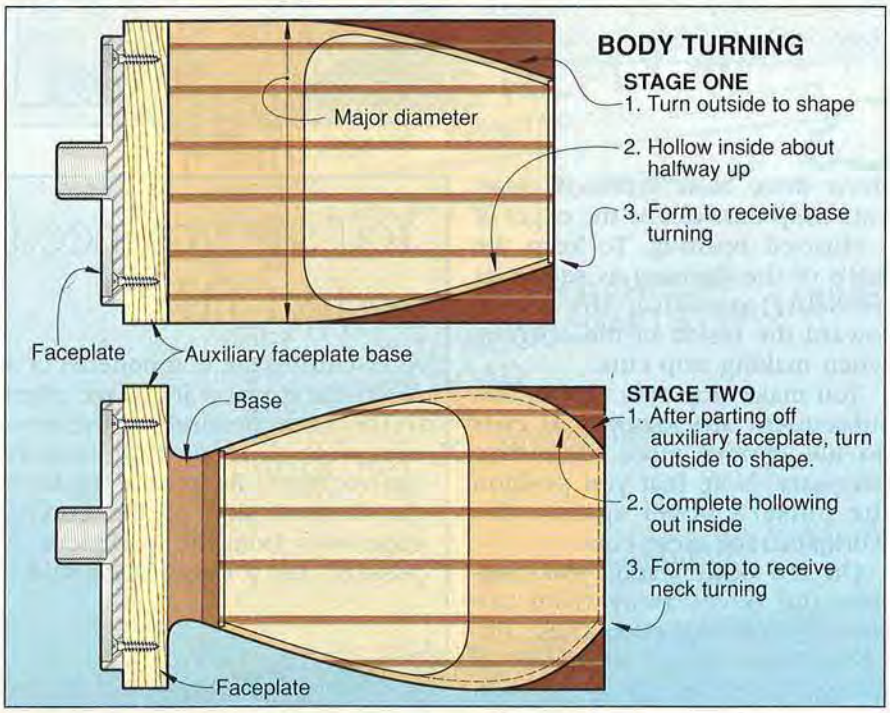
Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
A body staves	1¾"	2"	8⅞"	A	16
B* body accents	⅛"	2 1/16"	8⅞"	W	16
C base	1½"	5" diameter		C	1
D base accent	½"	5" diameter		W	1
E neck	1½"	5½" diameter		C	1
F neck accent	½"	5½" diameter		W	1

*Please read the how-to instructions before cutting these parts to width or length.
Materials Key: A-ash, C-cherry, W-walnut


Height of holder must be 3/4 dia. of cylinder
8 3/4"
3/4" plywood
1/4" hardboard or plywood
Miter gauge set at 90°
Saw blade set at 90° from saw table

TRIMMING URN BLANK TO LENGTH



Get to the bottom of it

Mount the faceplate, with a new ¾"-thick auxiliary faceplate, on the lathe. Scribe a centered 5"-diameter circle on the face.

Bandsaw parts C and D, and glue them inside the scribed circle. Glue the thicker piece, part C, directly to the auxiliary faceplate.

Round the base assembly (C and D) to about 4¾" diameter. With the parting tool, form a rabbet on the tailstock end to mate with the one in the bottom of the urn body. Then, apply glue to the joint and assemble the body and base. Slide the lathe's tailstock up to clamp the pieces until dry.

With the tailstock in position for support, part off the auxiliary faceplate on top of the urn. Turn the top of the body to shape on the outside. Then, complete turning the inside (see Stage Two of the Body Turning drawing). Sand the inside to 220 grit.

True the top edge. Then, cutting straight in from the end with a parting tool, form a 4½"-diameter opening in the top of the urn to receive the neck assembly. (See the Neck Opening Detail.)

You're up to your neck

Turn the neck assembly on a 6"-diameter, 1½"-thick auxiliary faceplate. Scribe a 5½"-diameter circle centered on the faceplate. Bandsaw parts E and F, and glue them inside the circle, with part E against the auxiliary faceplate.

Round the neck assembly to 5¼" diameter. Using the bowl gouge, bore the 2½"-diameter neck opening all the way through both parts.

Turn the neck to rough shape, leaving the diameter of the walnut layer slightly larger than the diameter of the body top. Form a rabbet on the neck corresponding to the opening in the top of the body. Check the fit as you work.

Dismount the faceplate, and detach the auxiliary faceplate with the neck attached. Mount the faceplate that has the urn body attached onto the lathe headstock. Apply woodworker's glue around the neck joint, and assemble the body and neck. Clamp with the lathe tailstock, and let dry.

You've urned success!

With the neck end supported by the tailstock, finish-turn the outside surface of the urn. Part off the auxiliary faceplate on top of the neck, and finish-turn the rim and inside of the neck.

Sand the completed turning with progressively finer grits from 100 to 320. Apply a clear finish (we used spray lacquer). When dry, buff and wax. Then, carefully part the urn from the auxiliary faceplate. Sand the bottom, sign your name, and finish to match the rest of the urn.

Project Design: Lee Gatzke
Illustrations: Kim Downing
Photograph: John Hetherington

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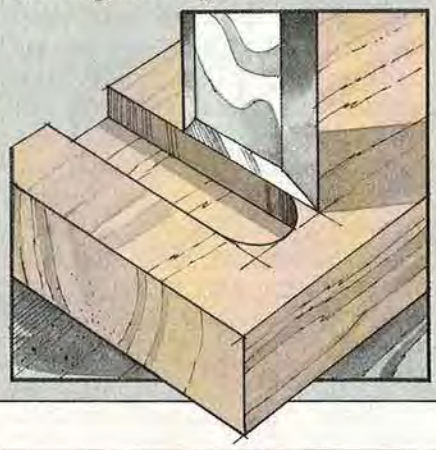
BENCH CHISELS What to know

For centuries, woodworkers have depended on a sturdy set of bench chisels to get their work done—and with good reason. Primarily, chisels help you square up mortises, dadoes, and rabbets, but you'll also find them handy most any time you need to shave off a little wood or glue. In this article, we'll show you a few chiseling basics, and then share the ways we put chisels to work in the *WOOD*® magazine shop.

How to square rounded corners

Power tools such as routers help you remove most of the material from a stopped dado, mortise, or rabbeted opening. Many times, you need to square the corners of these cuts with a chisel in order for the mating workpiece to fit. Here's how to go about it:

1 Align the edge of a wide (¾" or wider) chisel along the layout line of the cut and across the grain as shown in the illustration *right*. Strike the chisel with a mallet so it cuts to a depth of about ⅛". Repeat this step for all of the across-grain stop cuts.



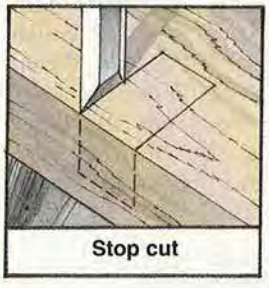
BEVEL BASICS

Before we get down to specific uses for chisels, we'd like to share three general guidelines that we've found essential for chiseling success:

- Buy a good set of chisels. Generally, higher-priced models hold edges longer, stand up better to mallet blows, and feel more comfortable in your hand.
- To work with chisels effectively, you must keep them properly honed. For help in this area, see the article "Hollow-Grind Sharpening" in the June, 1986 issue of *WOOD* magazine.
- No matter what type of work you do, keep in mind the right way to position the chisel's beveled edge. The illustrations *below* show three basic types of chisel cuts. ***Stop cuts*** define the edges of a chiseled opening. To keep the walls of the opening as square as possible, position the bevel toward the inside of the opening when making stop cuts.

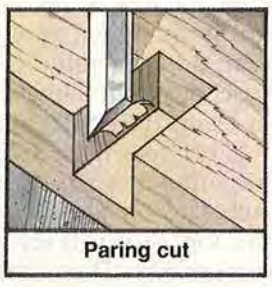
You make stop cuts first so that subsequent ***stock-removal cuts*** do not remove more stock than necessary. Note that you position the chisel's bevel against the workpiece for these cuts.

On the other hand, you position the bevel away from the stock for ***paring cuts***. These finishing cuts remove small bits of material to clean and square up a surface, such as the wall of a mortise or dado.



Stop cut

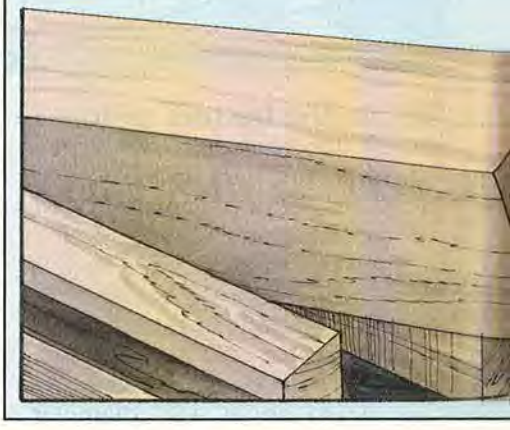
Stock-removal cut



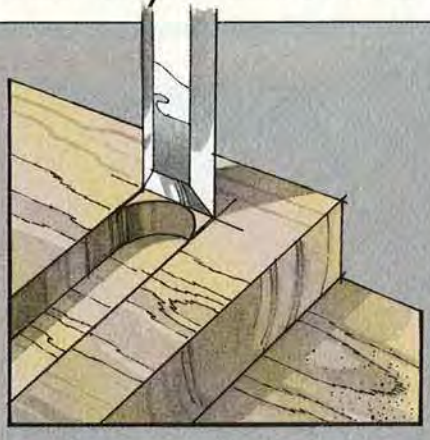
Paring cut

You say you need to perfect fit?

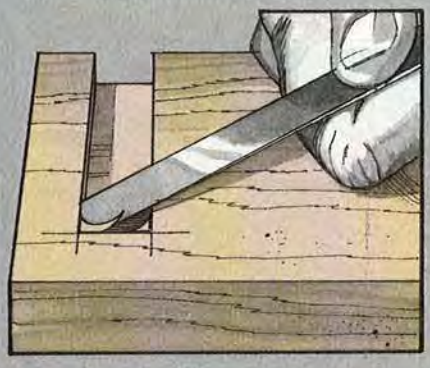
After cutting the components of a mortise-and-tenon joint, we often fit the tenon precisely to the mortise with fine paring cuts as shown *right*. Be careful to keep the beveled side of the cutting edge away from the workpiece. If possible, use a chisel that's wider



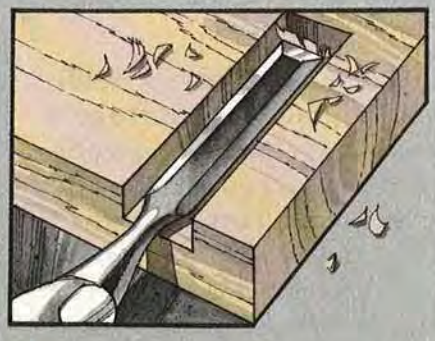
before you take a chip off the old block



2 With a chisel of the same width as the dado or mortise, make a stop cut with the grain as shown *above*. For rabbeted openings use a ¾"-or-wider chisel.



3 Now, make stock-removal cuts with the grain as shown *above*. Once you reach the depth of the stop cuts, repeat Steps 1–3 until you remove all of the unwanted material.



4 Clean up the bottom of the dado or rabbeted opening with a paring cut as shown *above*. ***Note:*** *For help in chiseling the opening for a hinge, see the article "The Perfect Hinge Mortise" in the August 1988 issue of* WOOD.

pare tenons for a

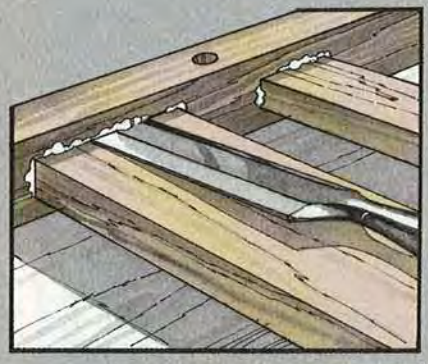
than the tenon to help you make a uniform, level cut across the cheek of the tenon.

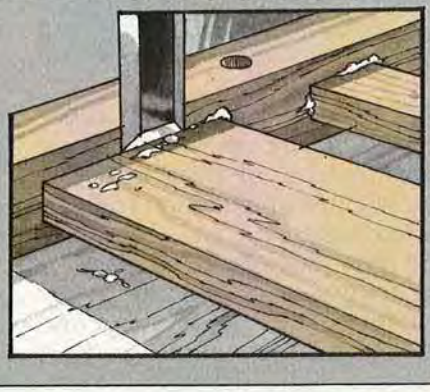
Tips for putting the squeeze on glue squeeze-out

Sometimes, we forget to remove glue squeeze-out before it hardens. At such times, we can rely on the chisel to rescue us.

1 As shown *right*, position the chisel edge against the glue squeeze-out as if you were going to make a paring cut. *Make certain that the chisel bevel faces away from the workpiece.* To pop loose the squeeze-out, tap the chisel lightly with the heel of your hand.

2 Remove any remaining bits of squeeze-out on the other side of the joint by positioning the chisel as shown *right. Again, position the bevel away from the workpiece.* Little squeeze-out remains at this point, so carefully and gently tap the chisel. Remove any remaining glue with light scraping or sanding.



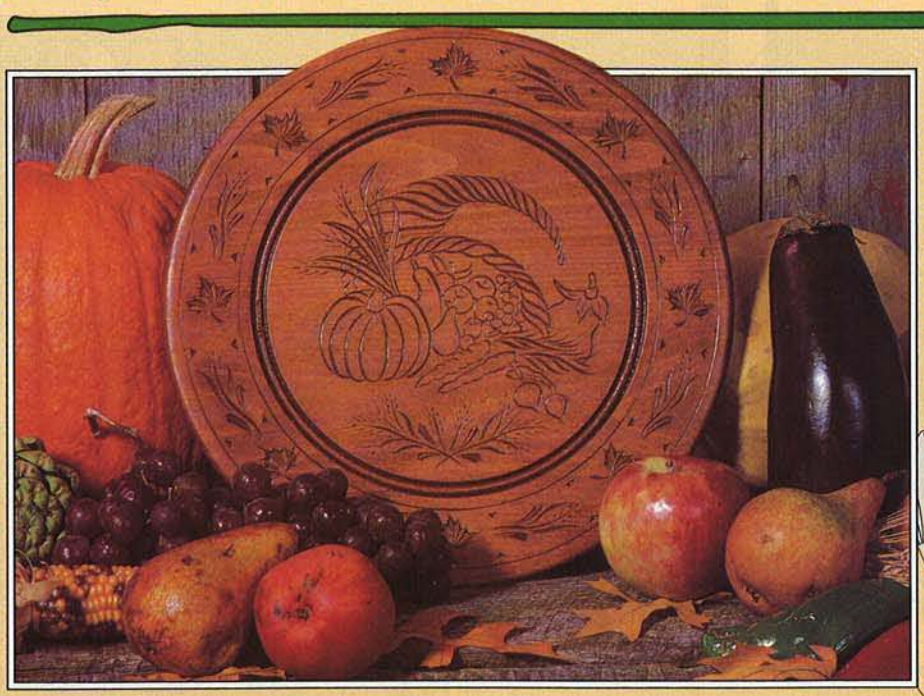


Written by Bill Krier with Jim Boelling Illustrations: Jim Stevenson

plate of plenty

A CHIP-CARVED THANKSGIVING TREAT

The horn of plenty, a traditional symbol of nature's bounty, sets off this decorative chip-carved plate. Add the graceful rim design of leaves and wheat, and you'll have a carving to display not only at Thanksgiving, but throughout the year.



Tools and supplies

Stock

Wooden plate. (For photography, designer Pam Gresham carved a custom-turned plate. Use any wooden plate with a 7½"-diameter center and a rim about 1¾" wide. Pam recommends the one listed in the Buying Guide.)

Knives

Chip-carving cutting knife
Chip-carving stab knife

Buying guide

Complete kit

Basswood plate with Wayne Barton cutting knife and stab knife, Package No. 15N55, $43.45 via UPS ground in U.S. (Plate, item no. 50A83, and knives also available individually.) Woodcraft Supply, 210 Wood County Industrial Park, P.O. Box 1686, Parkersburg, WV 26102-1686 or call 800/225-1153.

Book

Basic Chip Carving with Pam Gresham, Schiffer Publishing Co., $15.95 (Mo. residents, $16.85) ppd. in the U.S., Ozark Frontier Woodcarvers, P.O. Box 6136, Branson, MO 65616. No telephone orders, please.

Think of chip carving as engraving on wood. It's a matter of cutting away precise chips of wood to create an incised design.

To form the V-groove lines in this design, make two knife cuts. First, incise the pattern line in one direction, holding the cutting knife at a 60–70° angle to the surface. Then, turn the wood and carve in the opposite direction, releasing a wedge-shaped slice.

On tight curves, try this: Carve the outside first, holding the knife straight up. Then, slant the knife to carve the inside of the curve.

Start in the middle

Draw perpendicular centerlines on your plate, forming a cross extending to each edge. Photocopy the full-sized center pattern. Place the *red* centerlines over the plate centerlines, and trace the *black* carving lines onto the plate.

Carve in the numerical sequence shown. This helps achieve the design's effect of stacked fruits and vegetables.

For the wheat tassels, hold the *stab* knife with the handle straight up and the sharp edge toward you. Press the point into the wood near the stalk, and then rock the handle toward you.

A rope border pattern (carve it as a series of curves) makes up the cornucopia body. At the mouth, work from left to right.

Note that a rib runs along the center of four leaves in the wheat design at the bottom (no. 37). Carve each leaf as two chips, one on each side of the rib (see illustration). In this case, carve beside the pattern line.

Get down to the border

Draw a centered pencil line around the rim. Then, mark the midpoint of each of the quadrants between the plate centerlines. (Eyeballing is close enough.)

Center a maple leaf at each mark and at each centerline, a total of eight leaves around the rim. Note their orientation. Add the wheat stalks between the leaves. Draw lines ⅛" from the outside and inside of the rim.

Carve a series of adjacent chips for the maple leaves, leaving ribs as with the wheat leaves in the center. Work right to left to keep the already carved portion behind

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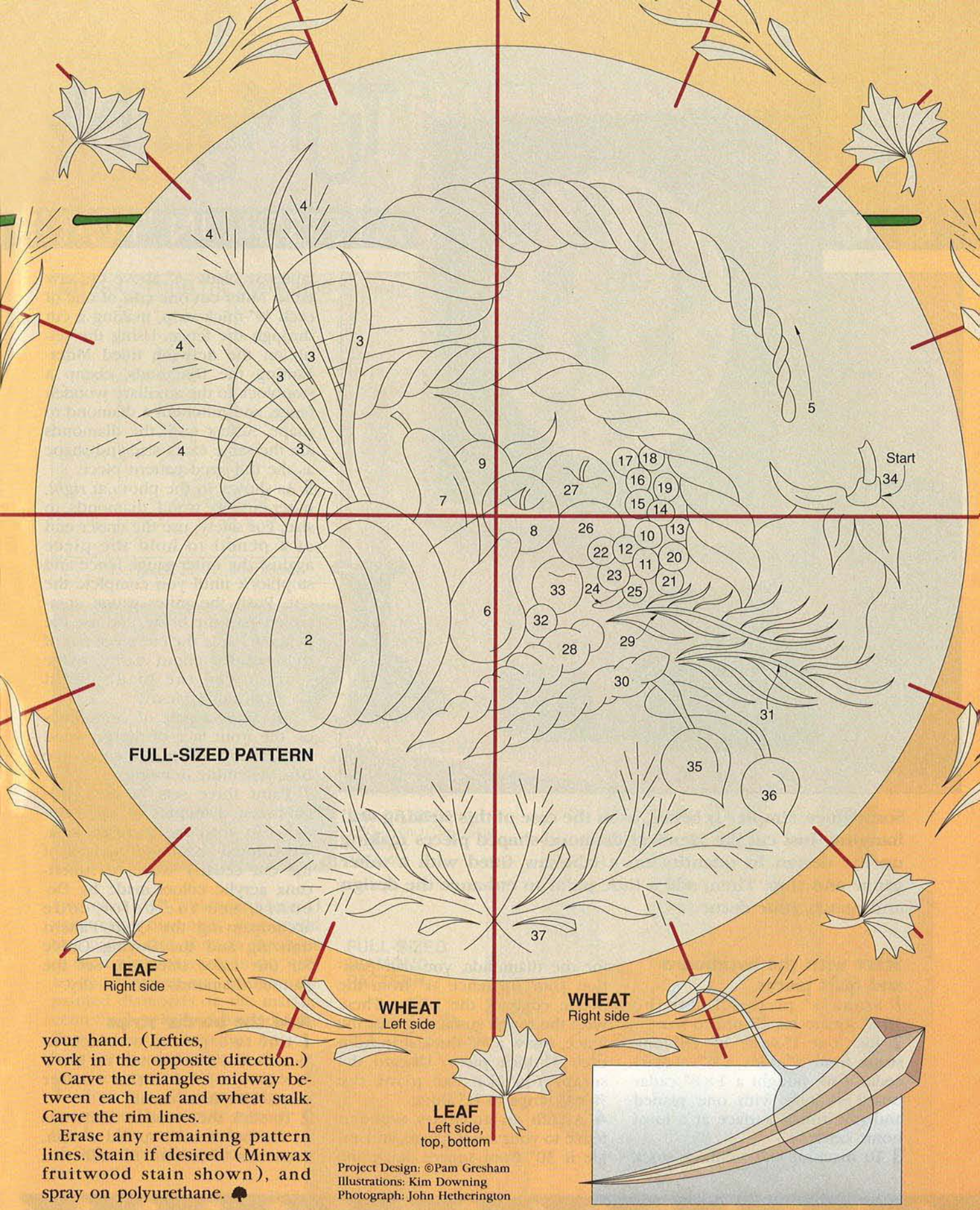

your hand. (Lefties, work in the opposite direction.)

Carve the triangles midway between each leaf and wheat stalk. Carve the rim lines.

Erase any remaining pattern lines. Stain if desired (Minwax fruitwood stain shown), and spray on polyurethane.

Project Design: ©Pam Gresham
Illustrations: Kim Downing
Photograph: John Hetherington

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TUMBLING

A LESSON IN "PLANE"

Sometimes, simpler is better, as in the case of this striking wall hanging. Just cut the identical diamond-shaped pieces making up the design in quantity on a tablesaw fitted with a miter gauge and stop. Then, add a little paint to enhance the design and match your decor.

Start with the backboard and quilt pieces

1 From ⅛" plywood, cut the 10⅞"-square backboard to size.

2 Rip four 1"-wide by 24"-long strips from 1"-thick (⅞" actual) cedar. (We bought a 1×8" cedar board 4' long with one planed and one rough surface at a local home center.)

3 To machine the ⅜"-thick stock for the diamonds, you can position your rip fence ⅜" from the inside edge of the blade. Then, with the rough surface against the fence, resaw a ⅜"-thick strip from each 1"-thick piece. Discard the scrap. You also can plane the ⅞×1" strips to ⅜" thick.

4 Attach an auxiliary wooden fence to your miter gauge, and angle it 30° from square. Raise the tablesaw blade ½" above the saw table. Miter-cut one end of one of each ⅜"-thick strip, making a cut through the fence. Using the setup on the drawing titled Miter-Cutting the Diamonds, clamp a stopblock to the auxiliary wooden fence, and miter-cut a diamond to shape. Adjust until the diamonds are the same exact size and shape as the full-sized pattern piece.

5 As shown in the photo at *right*, miter-cut 50 wood diamonds to size. For safety, use the eraser end of a pencil to hold the piece against the miter-gauge fence and stopblock until you complete the cut. Push the miter gauge completely past the blade, and use the pencil to slide the cut piece out of the way. For photo clarity, we've removed the blade guard from our tablesaw.

6 Mark a pair of centerlines on the front face of the plywood background where shown on the Base Assembly drawing.

7 Paint three sets of diamonds (fourteen diamonds of each color). (To keep the textured look, we painted the *rough* surface of the cut cedar.) We used Americana acrylic colors made by DecoArt; see the color code accompanying the Quilt Pattern drawing and the Buying Guide for our color selection. Set the painted diamonds aside to dry.

Add the border strips

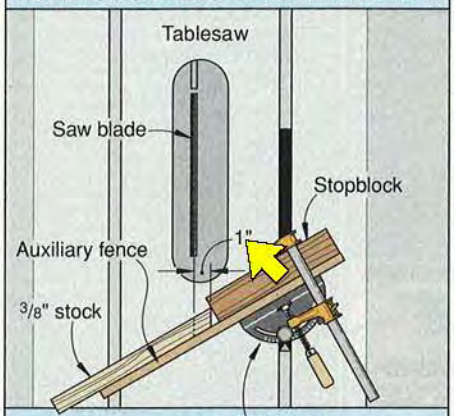
1 Cut two pieces of stock to ⅜×¾×10⅞" and two to ⅜×¾×10⅛" for the border strips. (We used cedar).

2 To stick the wooden diamonds to the backboard, spread a thin, even coat of ceramic tile adhesive

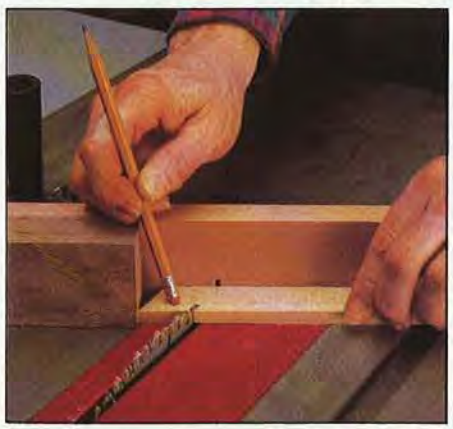
BLOCK QUILT HANGING

GEOMETRY

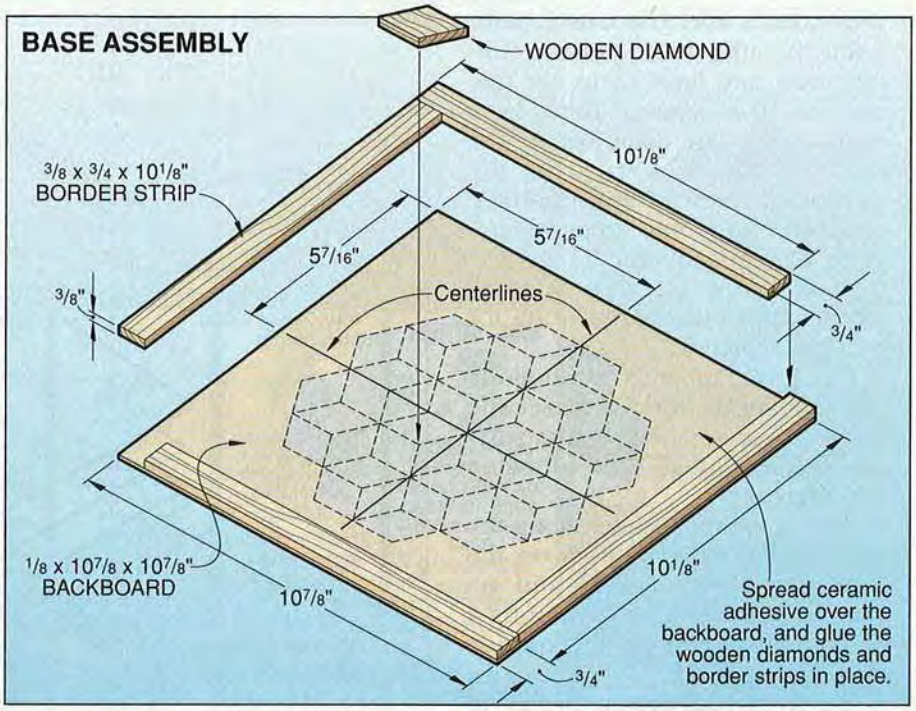
MITER-CUTTING THE DIAMONDS



Miter gauge set 30° from square



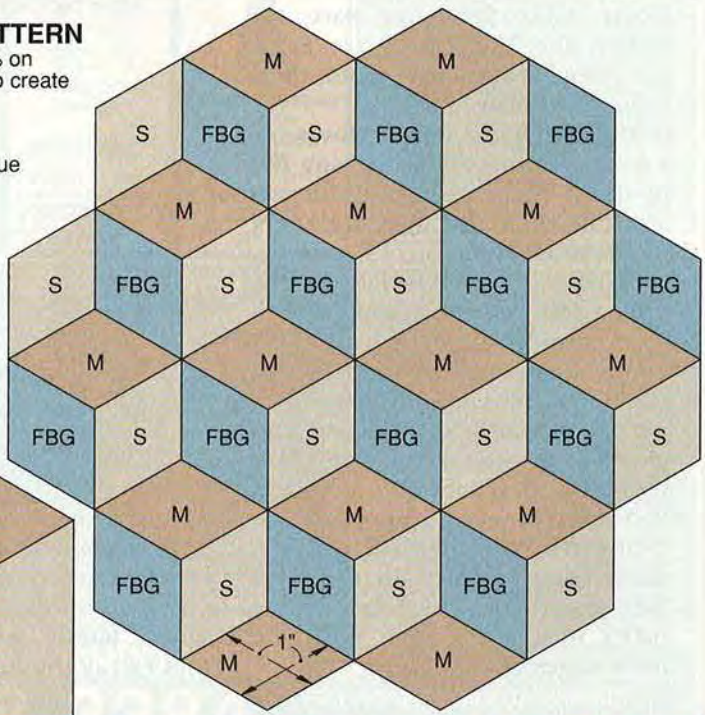
BASE ASSEMBLY



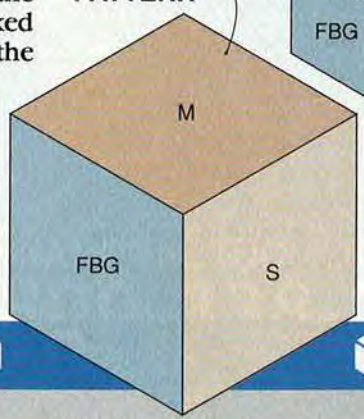
Spread ceramic adhesive over the backboard, and glue the wooden diamonds and border strips in place.

HALF-SIZED PATTERN
Enlarge pattern 200% on photocopy machine to create a full-sized pattern

COLOR CODE
FBG=French Grey-Blue
S=Sand
M=Mocha



FULL-SIZED DIAMOND PATTERN



(we used DAP Weldwood brand) onto each diamond. You could also use instant glue on the back of each piece. Starting in the center and working out, position the painted diamonds on the marked centerlines where shown on the Base Assembly drawing. Adhere the border strips in the same manner.

3 Allow the adhesive to dry overnight. Then, apply a clear finish. (We used a light coat of Deft aerosol lacquer.)

Continued

TUMBLING-BLOCK QUILT HANGING

Now, let's add the oak frame

1 Check with a local picture framing shop, and have them cut two mats to 10⅞" square. Then, have him or her cut openings in the pieces to the sizes stated on the Exploded View drawing. Have one piece of single-strength nonglare glass cut to size.

2 Next, cut a piece of ¾"-thick oak to 1⅛" wide by 54" long for the frame pieces.

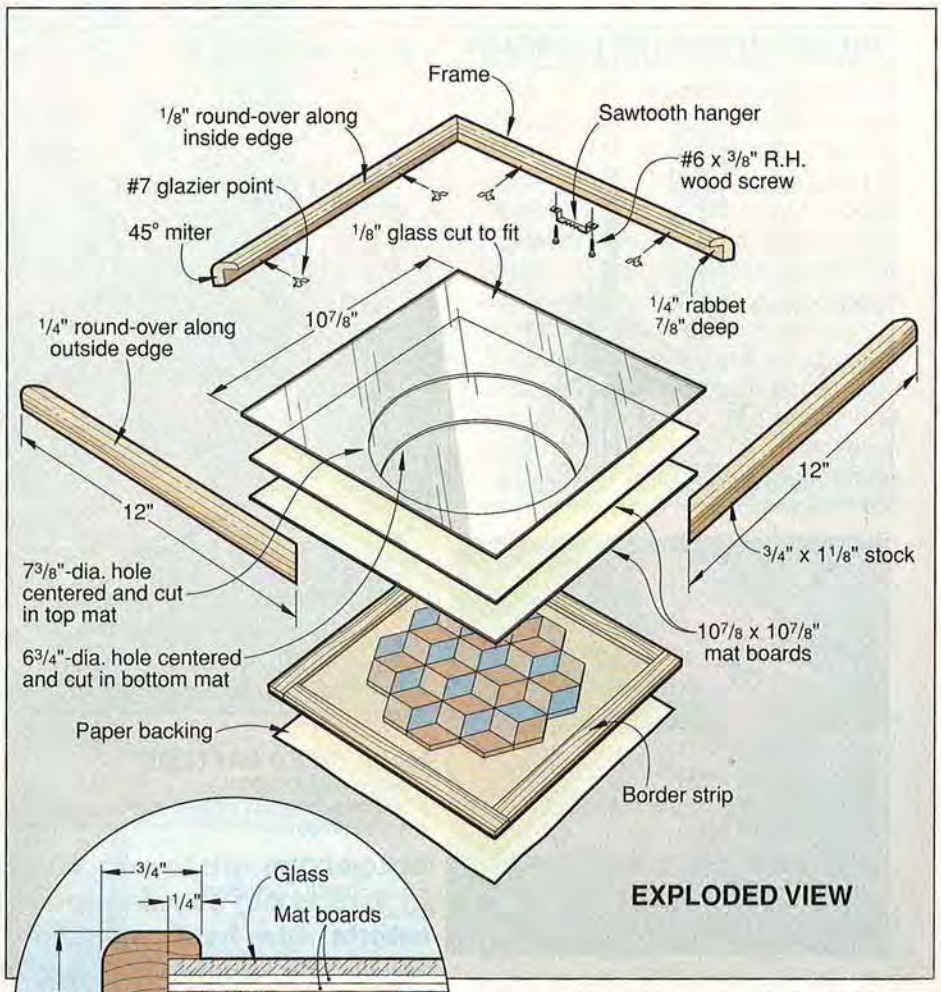
3 Cut a ¼" rabbet ⅞" deep along one edge of the long strip. See the Section View detail accompanying the Exploded View drawing for reference.

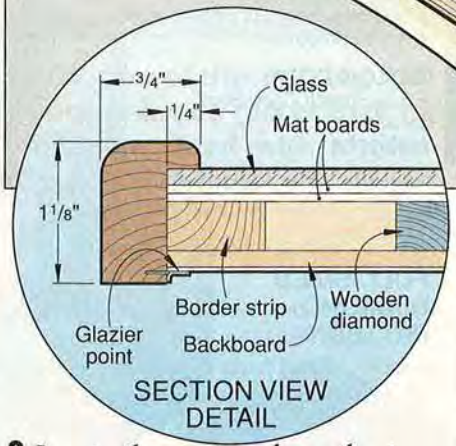
4 Rout a ⅛" round-over along the inside edge where shown on the Exploded View drawing and accompanying detail. Next, rout a ¼" round-over along the outside edge of the stock.

5 Miter-cut the frame pieces to length. Glue the frame parts together, checking for square. Sand the assembled frame smooth, then stain and finish it.

6 With the frame upside down on a towel (to prevent scratching it), fit the glass, mats, and quilt pattern into the frame. Install glaziers points to hold the pieces in place.

7 To add a dust cover, spread a thin, even coat of woodworker's glue on the back edge of the oak frame. Dampen a piece of heavy paper (we cut up a brown grocery bag) and apply it to the glued back edge of the frame. Let the paper dry naturally, or use a hair drier to speed up the process. If any wrinkles develop, dampen those areas and dry them with a hair dryer. Trim the edges of the paper dust cover even with the back edges of the frame.





8 Locate the center along the top edge of the frame, and nail a sawtooth hanger in place. Display your wood-quilt wall hanging where family members and visitors can enjoy it.

Buying Guide

• **Acrylic paints.** One 2-oz. bottle each of mocha DA-60, French grey-blue DA-98, and sand DA-4. Stock no. WMQUILT, $6.95 ppd.. Add $3.95 for a ½"-wide wash brush. Cherry Tree Toys, P.O. Box 369, Belmont, OH 43718. Call 800/848-4363 to order.

Produced by Marlen Kemmet
Illustrations: Kim Downing
Project Design: Ellis Miller
Photographs: Hopkins Associates

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361	3" X 24" BELT SANDER	177
362	4" X 24" BELT SANDER W/DUST BAG	188
363	4" X 24" BELT SANDER	183
368-1	8 1/4" BUILDERS SAW	141
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550	*NEW POCKET CUTTER*	178
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617	7 1/4" BUILDERS SAW	119
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691	1 1/2 HP "D" HANDLE ROUTER	143
692	TRU-MATCH JOINING ROUTER	213
693	PLUNGE BASE ROUTER, 1 1/2 HP	164
695	SHAPER TABLE W/ 1 1/2 HP ROUTER	204
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5009	MORTISE & TENON JIG	44
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5556	BISCUIT JOINER TILT FENCE	45
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6931	PLUNGE ROUTER BASE	74
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7312	OFFSET TRIMMER	122
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73333	RANDOM ORBIT DUST EXTRACTION	24
7349	BAYONET SAW	115
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7519	3 1/4 HP FIXED BASE ROUTER-1 SP	224
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7538	3 1/4 HP PLUNGE ROUTER-1 SPEED	224
7539	3 1/4 HP PLUNGE ROUTER-5 SPEED	259
7549	TOP HANDLE BAYONET SAW	143
7649	BARREL GRIP BAYONET SAW	143
7700	*NEW 10" LASERLOC MITER SAW*	338
9118	PORTA PLANE KIT W/CASE, CRBD BLD	199
9314	4 1/2" TRIM SAW KIT	148
9315	7 1/4" BUILDERS SAW KIT	138
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9367	3 1/4" PLANER KIT	144
9548	WORM GEAR BAYONET SAW KIT	210
9617	7 1/4" BUILDERS SAW KIT	138
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1347AK	4 1/2" MINI GRINDER W/CASE	105
1370DEVSK	6" VS DSTLS RNDM ORB SNDR KIT	259
1420VSR	DRYWALL DRIVER, 4.8 A, 0-4000 RPM	84
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1601	1 HP ROUTER	109
1602	1 1/2 HP HANDLE ROUTER	134
1603	1 1/2 HP "D" HANDLE ROUTER	142
1604	1 3/4 HP ROUTER	134
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1608U	UNDERSCRIBE TRIMMER	117
1609K	INSTALLERS KIT WITH 3 BASES	174
1609KX	DELUXE INSTALLERS KIT W/4 BASES	197
1613	1 3/4 HP PLUNGE ROUTER	163
1613EVS	2 HP VAR SP PLUNGE ROUTER	183
1614	1 HP PLUNGE ROUTER	127
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SV12SD	4 1/2" ORBITAL SANDER W/DUST BAG	188
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2977-02	3 3/8" CRDLS CIRCULAR SAW KIT, 12V	144
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EY6207BC	12V, 1/2" KYLS CHK, VSR, CRDLS W/15 MIN CHARGE & CASE	215

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0405-1	9.6V KYLS CDLS DRILL KIT W/2BAT, CS	169
0407-1	SAME AS ABOVE BUT 12 VOLT	179
6012	1/3 SHEET FINISHING SANDER	124
6014	1/2 SHEET FINISHING SANDER	124
6017	1/4 SHEET FINISHING SANDER W/BAG	55
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6365	7 1/4" CIRCULAR SAW, 13 AMP	120
6490	*NEW* 10" MITER SAW	249
6507	VAR SPEED SAWZALL W/BLADES & CSE	143
6508	SAME AS 6507 BUT W/PERMANENT CRD	143
6511	2 SPEED SAWZALL W/BLADES & CASE	137
6527	SUPER SAWZALL W/BLADES & CASE	169
6528	SAME AS 6527 BUT W/PERMANENT CRD	169

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DW945K2	12V CORDLESS KIT W/2 BATTERIES	168
DW318K	JIG SAW KIT, VS, ORBITAL	144
DW682K	BISCUIT JOINER KIT	224
DW705	12" COMPOUND MITER SAW	358
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How to contact toolmakers

Here's a rundown of the phone numbers for the manufactuers mentioned in the charts on pages 46-59, and in the product recommendations on pages 74-75.

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BLASTS FROM THE PAST

WINNERS IN PREVIOUS PRODUCT REVIEWS

We wish it was possible to present a complete run-down of all major tools and woodworking products in one issue of WOOD® magazine, but we just don't have the space. The next best thing, however, is to provide you with the tool and product picks from the categories not included in the main sections of this magazine. These items earned "buy" recommendations in issues dating back to the August 1992 issue.

To find the addresses and phone numbers of the manufacturers mentioned here, see the listing on page 72. Listed below you'll find the recommended products preceded by the issue in which the original comparison article appeared.

•August 1992, an evaluation of 59 finish removers

In this exhaustive test we found that methylene-chloride-based products easily outperformed other stripping formulations. Among the methylene-chloride solutions, we especially liked the spray-on types, including Dad's Easy Spray and Klean-Strip Non-Flammable Sprayable.

Methylene-chloride products can be damaging to your health if you don't follow all of the necessary precautions for eye, skin, and respiratory protection, so we also looked at today's so-called "safe" finish removers. You'll find these products more pleasant to use, but they take longer to work. Our top choices in this group were Woodfinisher's Pride (paint or varnish formula), and Peel Away 6.

•December 1992, 13 biscuit joiners

The DeWalt DW682 (about $230) stood out as the overall best value. Also earning high value ratings were the Virutex AB-11 and Ryobi JM-100K.

•February 1993, 13 random-orbit sanders

In making our selections, we broke these machines into two categories: units costing less than $90, and those selling for more than $90. The under-$90 machines should suit most home hobbyists and part-time professionals. If you need an aggressive machine that will hold up in daily use, you'll need to spend more than $90.

Our favorite picks in the under-$90 category: Black & Decker 7474, Ryobi RS115, and Porter-

Cable 333. Among machines priced over $90, we liked these models: Bosch 3283DVS, Porter-Cable 7336, and Skil 7484.

Bosch 1290D

•April 1993, 29 finishing sanders

We divided these machines into three categories according to the size of their sanding pads. Among ½-sheet sanders, we liked the Bosch 1290D best, with the Elu 4015, Milwaukee 6014, and Porter-Cable 505 close on its heels. In ¼-sheet (palm) sanders, our top picks were the Porter-Cable 330, DeWalt DW411, Milwaukee 6017, and Sears 11602-an excellent value at $38.

Porter-Cable 330

If you can't afford to buy a ½-sheet sander and ¼-sheet sander, you may want to compromise by purchasing a ⅓-sheet model. In this category we prefer the Ryobi S45.

•August 1993, three brands of 4-in-1 machines

These machines will plane, mold, sand, or saw stock. In our comparison, we found it to be a toss-up between models manufactured by RBI and Woodmaster. If you're interested in purchasing one of these versatile machines, contact both manufacturers and ask about a model tailored to your specific milling needs.

•September 1993, 32 models of 10" circular saw blades

Blades with 40 or 60 teeth with alternate-top-bevel (ATB) grinds were the best all-around performers in this test. The best of the bunch was the Forrest 40-tooth Woodworker II (costing about $110). For less than half as much money, these circular blades perform nearly as well: Amana 610600, Freud models LU72 and LU88, and Oldham/U.S. Saw Wizard Elite 1007740T.

For velvety-smooth, chip-free crosscuts and miters, the 80-tooth Freud LU85 had no equal among blades costing less than $100. It was also the quietest blade we tested. Among rip blades, the 30-tooth Systi Matic 10GR30 earned top honors.

•October 1993, 10 lathes priced under $600

The Delta 46-700 (about $440) was the best value among these machines, but several other lathes also earned our praise. Among models priced $300 and under, the Sears 22816 and Record DML 24 performed well. The Jet JWL-1236 was tops among models costing more than $500. Only the Jet comes with a stand.

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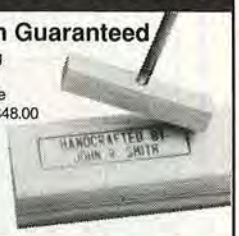

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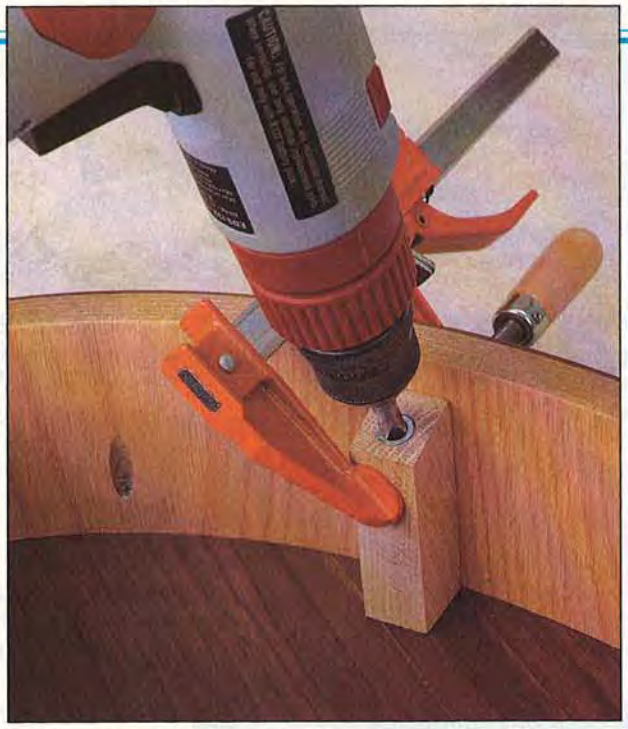
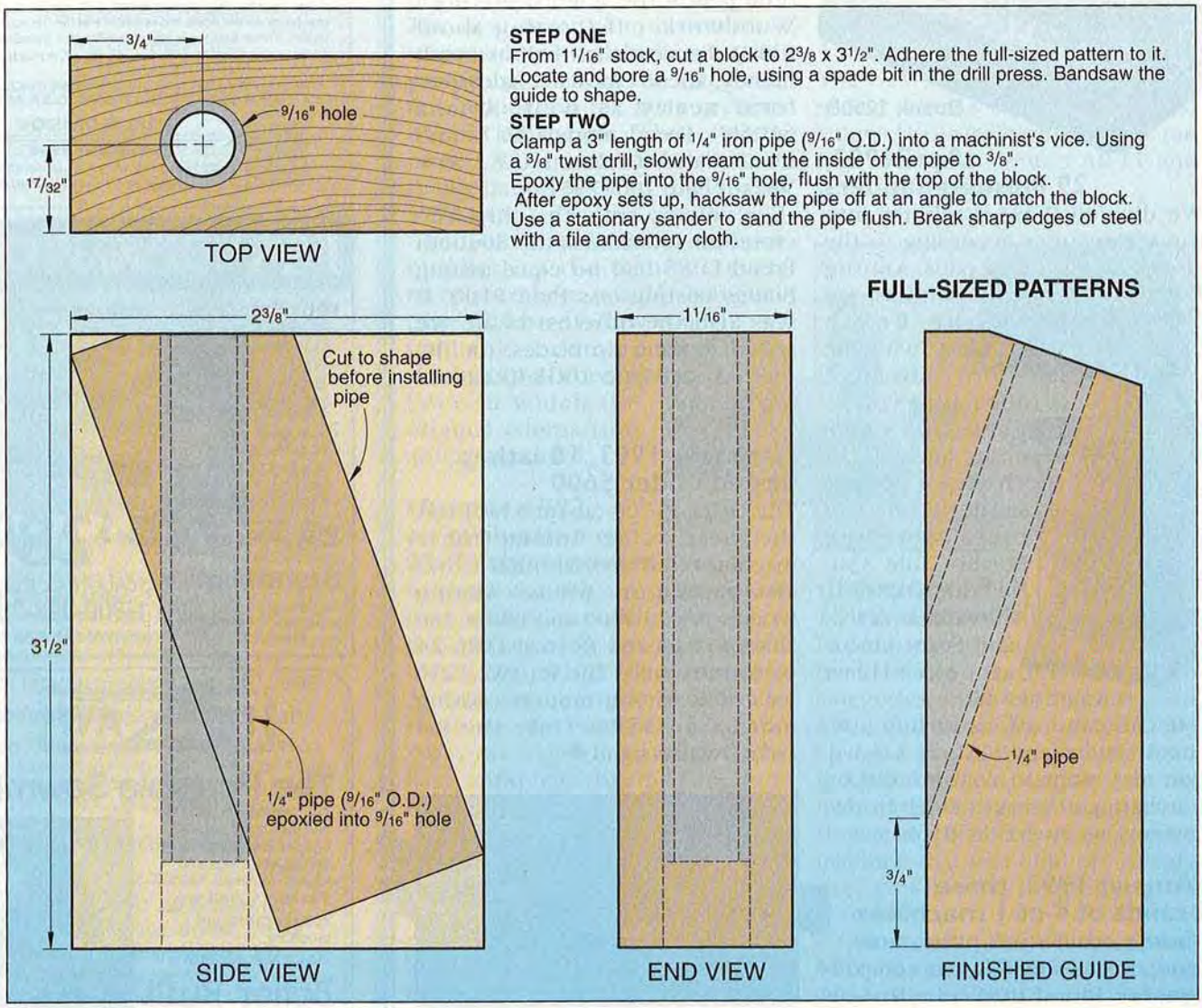


WOOD magazine's IDEA SHOP

Equipped with this handy shop aid, you can drill quick, accurate pocket holes for fastening face frames to cabinets, aprons to tabletops, and other similar tasks requiring angled mounting holes. To build the drill guide shown at *right*, just follow the instructions on the drawings *below*. Then, try it on our bow-front table on *page 33*.



STEP ONE
From 1 1/16" stock, cut a block to 2 3/8 x 3 1/2". Adhere the full-sized pattern to it. Locate and bore a 9/16" hole, using a spade bit in the drill press. Bandsaw the guide to shape.

STEP TWO
Clamp a 3" length of 1/4" iron pipe (9/16" O.D.) into a machinist's vice. Using a 3/8" twist drill, slowly ream out the inside of the pipe to 3/8".
Epoxy the pipe into the 9/16" hole, flush with the top of the block.
After epoxy sets up, hacksaw the pipe off at an angle to match the block. Use a stationary sander to sand the pipe flush. Break sharp edges of steel with a file and emery cloth.

FULL-SIZED PATTERNS

Project Design: James R. Downing Illustrations: Kim Downing Photograph: Wm. Hopkins

Print this article

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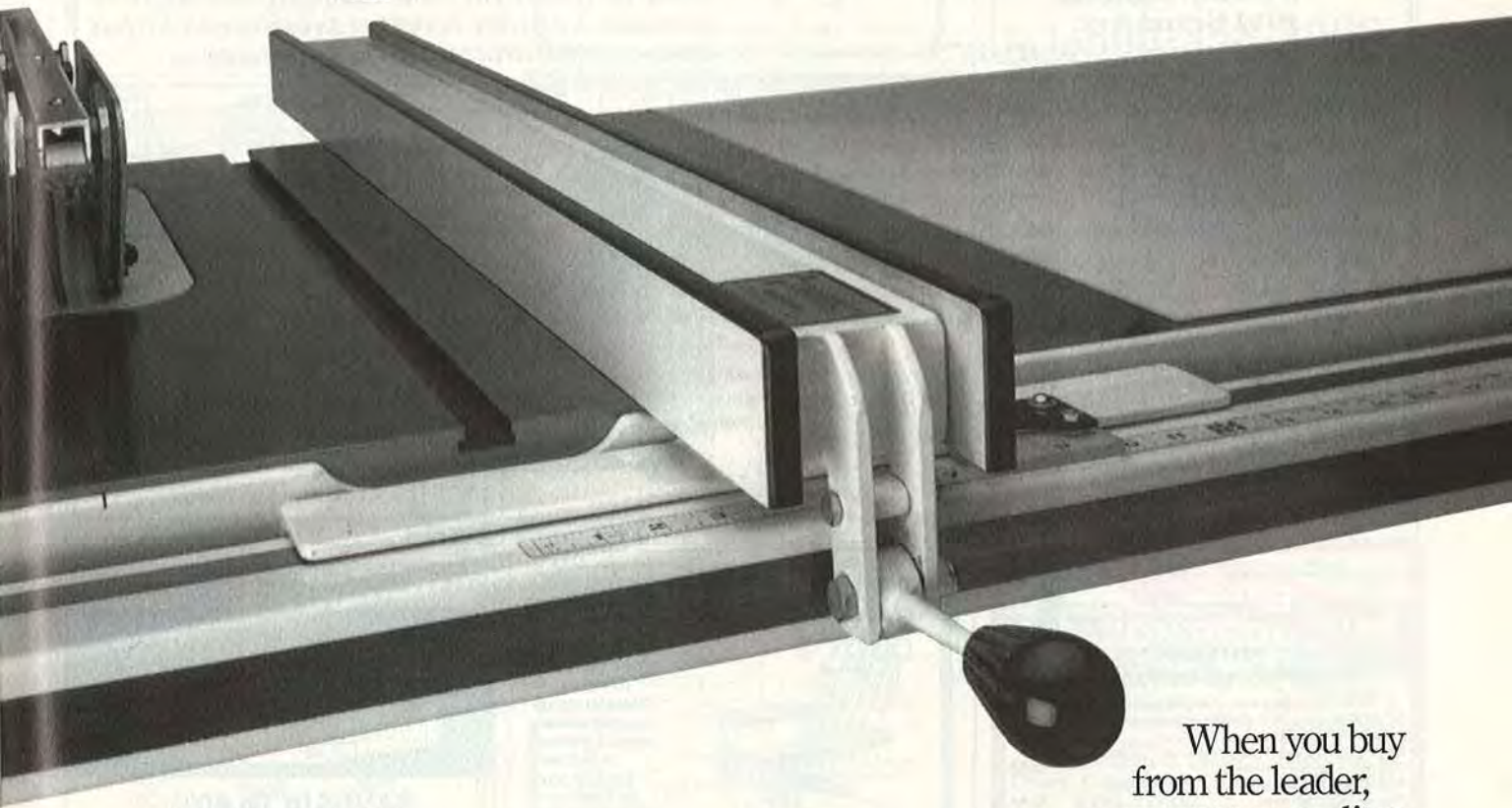

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Print this article

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Warped wood—the sequel

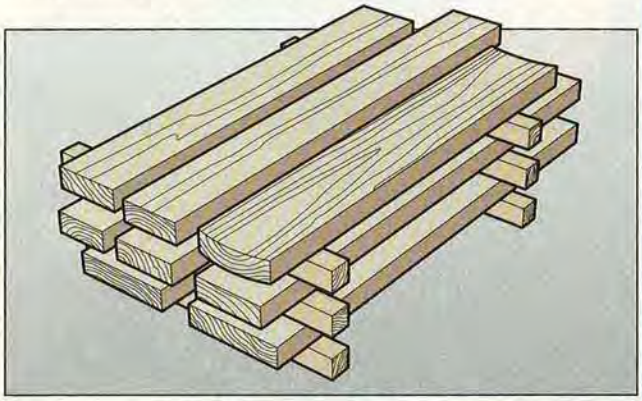
I recently built a coat tree, but when I got the four pieces for the center pole laminated and cut to size, I noticed that one of them had a warp which was bad enough to make the assembly doubtful. What could I have done to save this piece and the invested labor?

James R. Daneker, Cranston, RI

You have run afoul of one of the frustrating realities of woodworking, Jim. Unfortunately, wood moves, and it has no concern over how this movement will affect our work.

We recommend that you rough-cut pieces for the project, then stack and sticker them for several days to allow the wood to adjust. Any twists, warps, or other changes in the material can then be corrected by planing or jointing.

From time to time, a rough-cut piece will move to the point of being unusable. We suggest you cut up these pieces for smaller projects or eventually put them in your scrap bin. This may cost more in material, but your resulting projects will be less likely to self-destruct with weather changes.



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ASK WOOD

Continued from page 78

Wants a rigid-arm scrollsaw

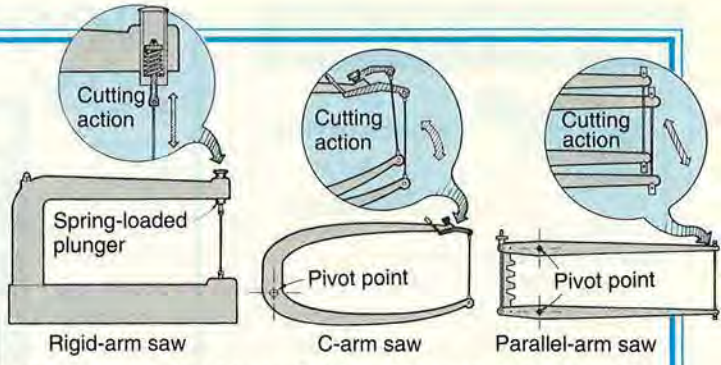
I found in your September 1991 issue an article on the merits of C-arm and parallel-arm scrollsaws. Interesting and informative as it was, I have a problem with these types of scrollsaws. I am a user of and enthusiast for the rigid-arm scrollsaw. In fact, I'd like to replace my old one with a new one, but they are very expensive, around $1,600 for Powermatic's model. I can afford one in the $300 to $500 range. Do you know where I could find one?

—Hearl Whitmer, Delta, Ohio.

You might find a used one in that range, Hearl, but before you spend your hard-earned dollars, we suggest you take a look at the new C-arm and parallel-arm saws on the market. You can find very good models in your price range. We asked our scrollsaw expert, Rick Hutcheson to explain why.

"I have five scrollsaws: two C-arms, two parallel-arms, and one rigid-arm," says Rick. "The only reason I have the rigid-arm was to find out why some people think they are so good.

"I have three basic problems with the rigid-arm: First, you can't adjust the tension to anything near what you can on the C-arm and parallel-arm saws.



This causes the blade to flex and makes exact work more difficult.

"Second, you only have power on the down stroke with rigid-arm saws. The up stroke is provided by a spring. The other two types have power on both strokes, making work more even and precise.

"Third, the only way to vary speed on the rigid arm is to change belts and pulleys. The other types have electric variable-speed controls available," Rick says.

"The only real advantage I can think of for the rigid-arm saw is that the blade does run perfectly perpendicular to the table. The C-arm saw does have a slight undercut. This small angle is not noticable in a piece under ¼" thick."

"The other advantage of the newer types is they cut much faster, and that's important for someone like me, who scrollsaws for a living."

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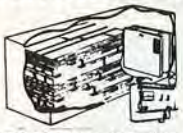

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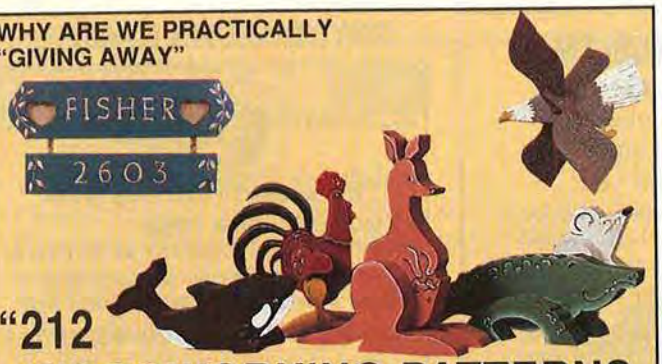

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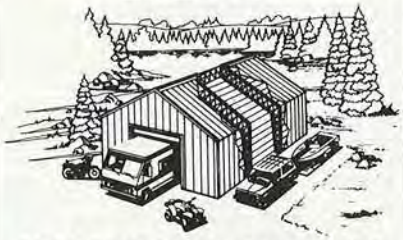

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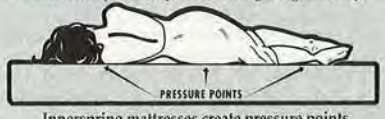

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40-640	20" Bench Scroll Saw	466	305
37-070	NEW 6" w/spd Bench Jointer	330	255
14-600	Hollow Chisel Mortiser	668	448
46-700	12" Wood Lathe	548	435
34-761	10" Unisaw 1-1/2 HP	1715	1359
33-990	10" Radial Arm Saw	818	615
37-280	6" Motorized Jointer	488	395
50-179	3/4 HP 2 stage Dust Collector	483	335
70-200	20" Floor Drill Press	1049	810
33-055	8-1/4" Sawbuck comp w/legs	865	595
34-330	8-1/4" Table Saw 13A	343	234
32-100	Station Plate Jointer	645	265
36-040	8-1/4" Compound Mitre Saw	224	159
34-915	30" Unifence	385	239
34-897	50" Delta Unifence	525	285
36-755	10" Till Arbor Saw	1264	935
34-444	Contractors Table Saw	850	615
17-900	16-1/2" Floor Drill Press	495	389
40-601	18" Scroll Saw with stand	942	745
22-662	13" Planer complete - 2HP	1499	1168

Planer has **$75.00 rebate**-price is before rebate

33-060	NEW "Sidekick" Miter Saw	499	365
14-070	NEW 14" Floor Drill Press	450	345
50-075	Dust Collector/Sweeper 3/4 HP	360	245

The following Delta tools have a $50.00 rebate! Price shown is before rebate.

28-283	14" Band Saw w/enc. stand	910	735
34-445	34-444 Saw w/30" Unifence	1200	775
34-445B	34-444 w/Bies. 50" saw fence	1300	889
37-154	DJ15 6" Jointer w/3/4HP motor	1420	1089

MILWAUKEE TOOLS

6527	NEW Sawzall with case	309	172
6528	above Sawzall w/wired cord	305	172
6125	NEW 5"Random Orbit Sander	200	119
6126	NEW 6"Random Orbit Sander	205	125
0399-1	12V cordless Drill Kit comp	309	165
0402-1	above Drill w/keyless chuck	314	174
0395-1	9.6V cordless Drill with case	284	158
0224-1	3/8" Drill 4.5 amp magnum	215	116
0234-1	1/2" Drill 4.5A mag 0-850 rpm	229	119
0244-1	1/2" Drill 4.5A mag 0-600 rpm	229	123
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	189	107
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	186	104
0375-1	3/8" close quarter Drill	229	132
0379-1	1/2" close quarter Drill	260	145
6546-1	cdls Scrwdvr 200 & 400 rpm	138	82
5399	1/2" D-hdle Hammer Drill Kit	325	188
6750-1	Drywall Gun 0-4000 5 amp	168	95
6507	Original SawZall with case	259	144
6014	Orbital Sander 1/2 sheet	214	124
8977	variable temp. Heat Gun	128	77
5397-1	3.8" var. spd Hammer Drill Kit	282	142
5371-1	1/2" var. spd Hammer Drill Kit	375	185
3107-1	1/2" w/spd right angle Drill Kit	385	209
6754-1	Drywall Gun 0-4000 5.4 amp	192	108
3300-1	1/2" var. spd right angle Drill	339	189
5680	Router 2 HP - 12 amp	355	198
0235-1	1/2" Drill w/keyless chuck	229	128
6145	4-1/2" Grinder 10,000 rpm	165	99
6142	6145 with case & accessories	204	129
6749-1	Drywall Gun 0-2500 5.4 amp	224	124
6365	7-1/4" Circular Saw 13 amp	214	122
6366	6365 w/fence & carbide blade	224	127
6368	6365 w/fnce,carb. blde,& cse	244	139
6377	7-1/4" Worm Drive Saw	324	182
6256	Top Handle Jig Saw	259	145
6490	10" Mitre Saw	444	265

FREUD CARBIDE TIPPED SAW BLADES
5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B.	10° 40	69	39
LU82M010	Cut-off 10"	60	93	49
LU84M011	Comb 10"	50	78	42
LU85M010	Super Cut-off	10° 80	115	59
LM72M010	Ripping 10"	24	69	39
LU73M010	Cut off 10"	60	84	45
LU87M010	Thin Kerf 10"	24	72	39
LU88M010	Thin Kerf 10"	60	88	48
LU98M010	Ultimate 10"	80	128	68
LU91M010	Compnd Mitre 10"	60	88	54
TK303	7-1/4" Finishing	40	38	23
TK306	10" Finishing	40	47	28
TK906	10" Combo	50	53	30
SD306	6" Dado - Carbide		215	112
SD308	8" Dado - Carbide		230	119
F0	1-3/4" x 5/8" Biscuit 1000 Qty		43	29
F10	2-1/8" x 3/4" Biscuit 1000 Qty		43	29
F20	2-3/4" x 1" Biscuit 1000 Qty		45	29
FA	Assorted Biscuits 1000 Qty		45	29
FB100	16 piece Forstner Bit Set		338	184
94-100	5 pc. Router Bit Door System		320	163

The following FREUD Tools have a $30.00 rebate! Price shown is before rebate - Expires 10/31/93

FT2000E	3-1/4 HP w/spd Plunge Router	410	205
JS100	Biscuit Jointer with case	334	162

MAKITA TOOLS

Model	Description	List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	128	74
6071DWK	above Drill w/removable batt.	203	110
5090DW	3-3/8" Saw Kit 9.6 volt	262	149
6010SDW	3/8" cordless Drill Kit 7.2V	99	59
ML900	Incandescent Flashlight 9.6V	Sale	37
6012HDW	2 speed Drill w/clutch-comp	243	129
6093DW	v/spd Drill w/clutch-complete	261	139
6093DWE	6093DW Drill Kit w/2 batteries	270	145
6095DW	6093DW Kit w/keyless chuck	278	135
6095DWE	6095DW Drill Kit w/2 batteries	270	148
6201DWE	NEW 9.6V Drill Kit w/2 batt.	298	155
6011DW	NEW 12V Drill Kit complete	330	165
632007-4	9.6 volt Battery	47	30
632002-4	7.2 volt Battery	39	28
5007NBA	7-1/4" Saw w/electric brake	255	129
5008NBA	8-1/4" Saw w/electric brake	316	188
B04510	1/4 sheet Pad Sander	97	54
9900B	3" x 21" Belt Sander w/bag	297	172
9924DB	3" x 24" Belt Sander w/bag	313	159
4301BV	Orb. var. spd Jig Saw 3.5A	275	162
JR3000V	var. speed Recip Saw w/case	250	135
LS1020	10" Mitre Saw 3.5 amp	599	339
9820-2	Blade Sharpener	394	189
1900BW	3-3/4" Planer with case	232	129
1911B	4-3/8" Planer 7.5 amp	267	139
9514B	4" Disc Grinder 4.6 amp	104	65
3601B	1-3/8 HP Router	274	158
B04550	1/4 sheet Pad Sander w/bag	94	54
DA3000R	3/8" Angle Drill	299	155
2708W	8-1/4" Table Saw	544	289
2711	10" Table Saw with brake	911	558
6404	3/8" Drill Rev. 0-2100 rpm 2 A	108	59
6510LVR	3/8" Drill Rev. 0-1050 rpm	156	88
6820V	0-4000 rpm Drywall Gun 5.2 A	167	92
6013BR	1/2" Drill Rev. 6 amp	265	138
5402A	16" Circular Saw 12 amp	708	395
3612BR	3 HP Plunge Router	364	169
9401	4" x 24" Belt Sander w/bag	360	205
4302C	var. speed Orbital Jig Saw	297	189
5077B	7-1/4" Hypoid Saw	273	138
LS1030	NEW 10" Mitre Saw	428	209
5007NB	7-1/4" Circular Saw 13 amp	225	116
2012	12" Portable Planer	959	495
LS1011	10" Slide Compound Saw	870	498

SIOUX TOOLS

8030	New 3/8" var/spd Drill	238	139
8000	3/8" var/spd close qtr Drill	201	123
690	5" Air Random Orbit Sander	139	132
690VV	690 w/ventun dust collection	281	175
658	5" Air Rndm Sander-dual action	261	155

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	377	269
SFN2	Finish. Nailer 1-1/2" - 2-1/2"	571	375
SN325	Nailer 1-7/8" - 3-1/4"	665	425
SN4	General purpose 2" - 3-1/2"	685	468
SLP20	New Pinner w/cse 5/8" - 1-5/8"	399	269
SKS	Stapler 5/8" - 1-1/2"	351	245
N70	NEW HD Framer 2" - 3-1/2"	625	475

BOSTITCH AIR NAILERS

N80S-1	Stick Nailer Super Sale		348
N12B-1	Coil Roofing Nailer	845	405
N60FN-2	Finishing Nailer	625	335
T31	Brad Nailer	270	145
CWC100	1 HP Pancake Compressor	445	289

EXCALIBUR Fences & Tables

TT45R24L9	24" Fence	369	299
TT45R50L12	50" Fence	399	318
EXSLT30	Sliding Table	599	475
EXSLT60	Sliding Table	745	585

SKIL SIZZLERS

77	7-1/4" Worm Drive Saw	257	144
2735-04	12 volt cordless Drill Kit	249	132
2735-04X	2735-04 with keyless chuck	269	135
1605-02	NEW Biscuit Jointer w/case	221	129
3400	10" Table Saw - Bench Top	270	179
3330	16" Scroll Saw - Bench Top	205	135

PANASONIC CORDLESS

EY6205BC	NEW variable speed 12 volt Drill w/15 minute charger & case	390	178
EY6205EQK	Same as EY6205BC but battery has 40% more life & 20% more torque	368	189
EY6281BC	NEW variable speed 9.6 volt Drill w/15 minute charger & case..	350	168
EY62821DKW	9.6 volt Drill Kit w/2 batt.	275	155
EY6181CRKW	NEW 9.6V PREDATOR Compact Drill Kit w/2 batt - 10% more pwr than EY62821DKW	305	164
EY6207BC	NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 minute charger & case.	421	222

PASLODE IMPULSE GUNS

IM250	Trimpulse Finish Nailer Kit	849	615
IM325	Impulse Framing Nailer Kit	849	595

HITACHI TOOLS

M12V	NEW 3 HP var. speed Router	477	225
TR12	Plunge Router 3 HP	355	174
F1000A	12" Planer/6" Jointer	2835	1549
C10FA	10" Deluxe Mitre Saw	553	299
C12FA	NEW 12" Mitre Saw	632	315
C8FB	8-1/2" Slide Compound Saw	1026	599
FREUD LU91M008	8-1/2" Carb bld 48 t	68	43

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14" (350 mm)
List 4.80 Sale 3.95

DS16
16" (400 mm)
List 5.10 Sale 4.15

DS18
18" (450 mm)
List 5.40 Sale 4.25

DS20
20" (500 mm)
List 5.60 Sale 4.35

DS22
22" (550 mm)
List 5.80 Sale 4.45

DELTA #34-080 10" MITRE BOX XTRA SPECIAL 198.00

DEWALT TOOLS

DW364	7-1/4" Circ. Saw w/brake	13 A	275	145
DW945K	3/8" 12V cdls Drill Kit w/2 batt.		296	169
DW944K	3/8" 9.6V cdls Drill Kit w/2 batt		277	154
DW610	1-1/2 HP 2 handle Router		270	148
DW411	1/4 sheet Palm Sander, 1.7 amp		97	58
DW100	3/8" Drill, 4 amp,0-2500 rpm,rev		116	68
DW510K	1/2" w/spd Hammer Drill w/case		298	165
DW682K	Biscuit Joiner with case		428	225
DW705	12" Compound Mitre Saw		658	358
DW615	NEW 1-1/4 HP Elect. Plge Router		290	158
DW625	NEW 3 HP Electronic Plge Router		500	275
DW675K	NEW 3-1/8" Planer with case		280	159
DW431	NEW 3 x 21 v/spd Belt Sander		320	182

PORTA NAILER

401	Porta Nailer complete	265	198
501	Face Nailer complete	265	195

WERNER LADDERS

6204	4' Fiberglass	179	65
6205	5' Fiberglass	199	75

FALL KIT SPECIALS

9852K	Porter Cable 9852 Drill Kit w/extra batt	185	
9853K	Porter Cable 9853 Drill Kit w/extra batt	185	
7335K	Porter Cable 5" var. spd Random Orbit Sndr w/cse & 1 roll 100X & 150X discs	273	169
7336K	Porter Cable 6" var. spd Random Orbit Sndr w/cse & 1 roll 100X & 150X discs	278	175
555K	Porter Cable Plate Biscuit Jointer with case & 1000 assorted biscuits	339	195
JS100K	Freud Jointer w/cs & 1000 biscuits	351	188
1581VSK	Bosch Top Handle Jig Saw with case & 30 Bosch blades	305	195
1582VSK	Bosch CLIC Barrell Grip Jig Saw with case & 30 Bosch blades	305	195
JM100KK	Ryobi Joiner w/1000 biscuits	475	242

BIESEMEYER FENCES

B-50	50" Commer. Saw Fence	329	298
T-SQUARE 52	52" Homeshop Fence	249	238
T-SQUARE 40	40" Homeshop Fence	242	208
T-SQUARE 28	28" Homeshop Fence	230	198

WEDGE SMART LEVEL

SM-PR2	2 FT Level with sensor	120	88
SM-PR4	4 FT Level with sensor	150	105
SM-PR6	78" Level with sensor	180	139
SERIES200	NEW 2FT Level with sensor		55

Item#		Sale	
Msx636 FEIN	Triangle Sander Kit	Sale	195
LPN672 PONY	Air Palm Nailer w/glove	Sale	94.99

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.00	11.89	61.00
#1	10"	6"	21.76	12.89	70.65
#2	12"	8-1/2"	24.95	14.95	80.95
#3	14"	10"	31.61	18.95	104.95
#4	16"	12"	42.30	24.95	143.95

JORGENSEN STYLE 37 2-1/2" Throat 1/4" x 3/4"

Item#	Jaw Length	List	Sale	Box of 6
3706	6"	9.86	6.25	34.75
3712	12"	10.92	6.75	37.75
3718	18"	12.05	7.25	40.75
3724	24"	13.16	8.19	43.75
3730	30"	14.70	9.10	49.75
3736	36"	16.05	10.19	55.75

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	13.61	7.89	84.99
52	1/2" Black Pipe Clamps	11.37	6.50	69.50

BOSCH

1581VS	Top Handle Jig Saw	265	145
1582VSC	NEW CLIC Barrell Jig Saw	265	145
Bosch Metal Case for above Jig Saws		34	32
Bosch 30 blade assortment for Jig Saws			27.99
1942	Heat Gun 600° - 900°	115	78
1272D	3" x 24" Belt Sander with bag	340	186
1273D	4" x 24" Belt Sander with bag	359	196
11-212VSR	Bulldog 3/4" SDS Rtry Drill	370	198
1347AK	4-1/2" Grinder w/case & access.	175	108
1348AE	5" Grinder 8.5 amp	209	118
1194VSR	1/2" var. speed Hammer Drill	264	145
1194VSRK	above Hammer Drill w/case	292	169
1608	5.6 amp Laminate Trimmer	154	89
1609K	Lam Installers Kit with 1609	315	175
1609KX	Deluxe Installers kit	369	209
1604	1-3/4 HP 2 Handle Router	249	137
1604K	same as above w/cse & acc	299	169
1606	1-3/4 HP D-handle Router	273	175
3258	3-1/4" Planer w/blade guard	247	139
3258K	3258 Planer with steel case	273	154
3270D	3" x 21" Belt Sander with bag	270	148
1273DVS	var. spd 4" x 24" Belt Sander	380	215
1614	NEW 1HP Plunge Router	225	128
1614EVS	NEW 1-1/4HP v/spd Plge Rtr.	260	149
1613	NEW 1-3/4 HP Plunge Router	290	164
1613EVS	NEW 2HP v/sp Plunge Router	330	184
1615	NEW 3 HP, Plunge Router	395	228
1615EVS	NEW 3 HP v/spd Plge Router	460	244
1632VSR	K Recip Saw 8.4A orb-v/spd	225	149
3050VSR	K 9.6V cdls v/sp Drill Kit comp	256	138
3051VSR	K3050VSRK w/keyless chuck	266	145
1370DEVS	6" Random Orbit Sander	481	219
3283DVS	5" Random Orbit Sander	169	98
3283DVSK	3283DVS Kit complete	220	119

ELU BY BLACK & DECKER

Model	Description	List	Sale
3338	2-1/4 HP v/spd Plunge Router	448	255
3375	3-1/8" Univ. planer 7.2 amp	329	155
3380	Biscuit jointer with case	569	248
3339	NEW 3 HP w/sp Plunge Router	500	275

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	105	65
1703-1	10" Mitre Saw w/73-770 blde	329	185
4011	1/4 sheet Palm Sander	85	59
79-034	Workmate 400	184	109
2694	7-1/4" Super Saw cat	260	144
2695	8-1/4" Super Saw cat	285	158

DAVID WHITE

LP6-20	Sight Level package - 20x	310	198
L6-20	Meridian Level - 20x	290	185
LT8-300	Level Transit - 26x	650	445
LT8-300P	above Level w/optical plum	769	519
LT6-900	Level Transit - 20x	389	245
ALT6-900	Automatic Level - Transit - 18x	549	385
ALTP6-900	above Level w/tripod & rod	600	438
ALP6-18HD	above Level w/tripod & rod	550	369

RYOBI SPECIALS

JP-155	6-1/8" Jointer/Planer	648	305
TS-254	10" Mitre Saw	420	209
RE600	3 HP Plunge Router	465	215
BE321	3" x 21" var. spd Belt Sander	290	138
TFD220VRK	12V cordless Drill Kit	325	172
JM100K	Biscuit Jointer w/case	453	215
BT3000	10" Table Saw	1204	545
TSS220	8-1/2" Slide Comp. Saw	966	445
DS1000	NEW Detail Sander	90	55
RS112	Palm grip Rndm Orb Sndr	90	55
AP12	NEW 12" Bench Planer	884	425
RA202	NEW 8-1/4" Bench Radial Saw	695	398
BS9000	NEW 9" Bench Band Saw	298	175
IDV26	NEW 28 Gal. Industrial Dry Vac	198	119
CSS450	NEW Oscillating Spindle Sander	298	175

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	559
STANDARD 10	"Professionals Choice"	499	399
COBRA	NEW Biscuit Joiner	Special	299

QUAL-CRAFT PRODUCTS

2200	Pump Jack	79	58
2201	Pump Jack Brace	30	20
2203	Pump Jack guard rail holder	31	21
2204	Workbench & rail holder combo	53	39

Buy any 6 (can be assort.) deduct 10%

2601	Wall Jack	167	108

Lots of 4 deduct additional 10%

PORTER CABLE

690	1-1/2 HP Router 8 amp	255	138
9690	690 Router with steel case	305	149
691	1-1/2 HP Router D-handle	280	149
695	1-1/2 HP Router/Shaper	390	218
696	HD Shaper Table	225	129
351	3" x 21" Belt Sander w/o bag	270	148
352	3" x 21" Belt Sander with bag	280	154
360	3" x 24" Belt Sander with bag	350	194
361	3" x 24" Belt Sander w/o bag	330	184
362	4" x 24" Belt Sander with bag	365	198
363	4" x 24" Belt Sander w/o bag	345	189
315-1	7-1/4" Top Hdle Circular Saw	220	118
9315-1	315-1 comp. w/cs & carb bld	250	139
617	7-1/4" Pushhandle Saw	220	124
9617	617 comp. w/cse & carb blde	250	142
97751	1/2" w/spd Hammer Drill w/cse	265	155
9629	Recip Saw var. speed 8 amp	265	148
9118	Porta Plane Kit 7 amp	380	209
505	1/2 sheet Pad Sander	225	118
6611	3/8" var. speed Drill 5.2 amp	210	118
6614	1/2" var. speed Drill 0-750 rpm	220	124
6615	7514 with keyless chuck	220	124
7549	Top handle Jig Saw 4.8 amp	260	145
330	Speed Block Sander 1/4 sheet	105	60
555	Plate Biscuit Jointer with case	320	168
345	6" Saw Boss 9 amp	190	104
9345	345 comp. w/cse & carb blde	220	119
9647	TIGER CUB Recip. Saw	205	117
9637	Full var/spd Recip Saw 8 amp	265	148
7519	3-1/4 HP Router 2 Handle	430	234
7518	3-1/4 HP 5 speed Router	495	272
7538	3-1/4 HP Plunge Router	430	234
7399	5.6 amp Drywall Cutout Unit	140	84
7310	5.6 amp Laminate Trimmer	160	92
97310	Laminate Trimmer Kit comp	355	197
7334	5" Random Orbit Sander	221	119
7335	5" var. spd Rndm Orbit Sndr	241	129
7336	6" var. spd Rndm Orbit Sndr	246	137
73333	NEW Dust Collection system	31.31	24.50
693	1-1/2 HP Plunge Router Base	315	172
6931	Plunge Router Base	125	77
7539	3-1/4HP var/spd Plunge Router	495	268
9852	12V 3/8"Drill w/cse 0-1000rpm	280	149
9853	9852 with keyless chuck	280	154
9854	12V 1/2" Drill w/cse 0-360 rpm	290	159
8500	12V battery for above drills	Sale	39

New Tools by Porter Cable

9841	9.6 volt cordless Drill Kit with 15 minute charger, battery, & case	309	174
9840	9.6 volt cordless Drill Kit with 1 hour charger, 2 batteries, & case	289	164
332	Palm Grip Rndm Orbit Sander	116	64
333	above Sander with dust bag	131	68
352VS	3x21 Belt Sander w/bag v/spd	295	165
7116	24" Omni Jig	530	294
334	333 Sander with PSA pad	131	74
550	Pocket cutter with case	330	185
7700	10" "Lazerloc" Miter Saw	634	339

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FINISHING TOUCHES

Print this article

CRAFT A TOY FOR JOY!

There's still lots of time for you to build a toy and enter *WOOD*® magazine's annual contest to benefit Toys for Tots. Deadline is February 1. For details, see *page 74*.

Trees need a trusty roll-on, too

In action similar to the human immune system, healthy trees generate pitch and other resins that ward off insect attack. But trees under stress, such as from a drought, produce less of these guardian materials. Stressed trees also give off a telltale odor that alerts their condition to pest predators, according to research done by the U.S. Forest Service.

Bark beetles and nasty gypsy moths, say researchers, home right in on this stressed-tree odor. Then, infestation begins. And so far, there's no mask for the musk.

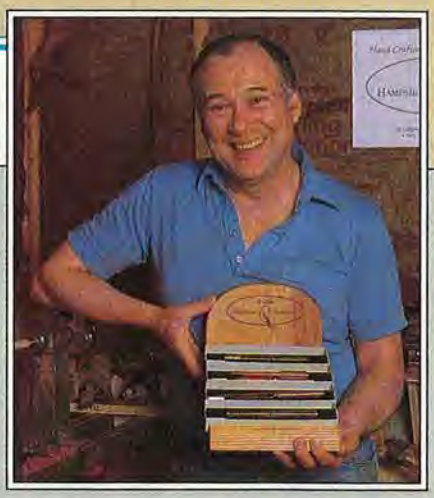
Passion for pencils and pens

To listen to Sandra and Neil Kenny of Claremont, New Hampshire, wooden pen and pencil sets are the best thing that have happened since sliced bread. That's because the couple will produce and sell a great many of them this year. And they'll make them all in their shop employing techniques learned in *WOOD* magazine.

"My husband, Neil, and I were looking through an issue of *WOOD* and came to an article on how to make wooden pens. We said 'Let's do it.' And that's how Ye Olde Hampshire Quillworks was born," recalls Sandy. (See "The Write Stuff," August 1991 issue, and the note *below.*)

"Neither of us had any experience with woodworking machines," says Neil, "but we must have had a natural instinct because it all came together." Now, the couple's basement workshop has a full complement of machines. And the Kennys continue to build on their original marketing concept: company premiums.

For California's Gallo Wineries, they made pen and pencil sets from white oak brandy-barrel staves. For the University of New Hampshire, dyed and pressurized wood in the school's colors became catchy writing instruments. And they have received orders from the state's governor's office for gift sets to give to dignitaries visiting New Hampshire.



Neil Kenny displays his wife's and his line of lathe-turned writing utensils and accessories that they first learned to make from a *WOOD* magazine article.

From the beginning, the Kennys have expanded their product line. It now includes fountain pens, roller-ball pens, perfume pens, as well as letter openers and magnifying glasses that complement the initial pens. They've also become juried members of the prestigious League of New Hampshire Craftsmen.

Neil and Sandra credit promotion, persistence, patience, lots of research—and one article—for their success. "But it's still unbelievable," says Neil.

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FOOLED BY A FOREST

Director Michael Mann's search for a stand-in for a 1757-vintage forest where he could film parts of his movie, *Last of the Mohicans*, led him to North Carolina. There, around Lake James, was a forest that looked very much like the old-growth trees once typical in the upstate New York setting of James Fenimore Cooper's novel.

But according to the *Charlotte Observer*, Mann's choice was convincing, but way, way off. The trees at the movie site were only 30 years old, having been planted after a clearcut. The forest products company that owns the land plans to clearcut the forest again in 20 years, when the trees finally reach maturity.

Illustrations: Jim Stevenson Photograph: Michael Dixon/Sierra Photographic Services

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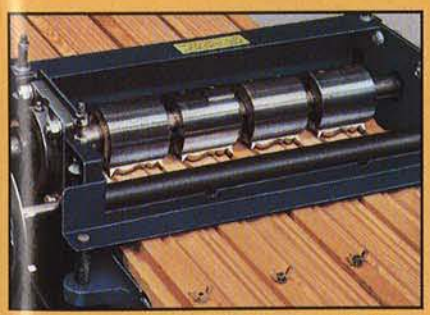

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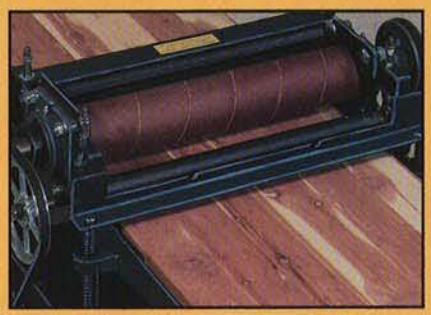

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Editor, Workbench Magazine

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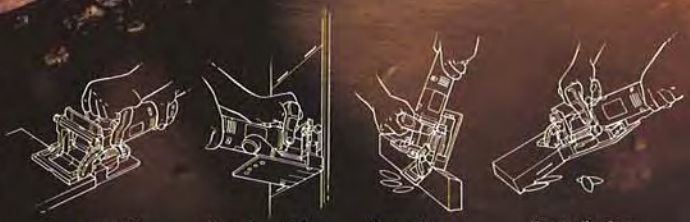

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